THE ORCHID REVIEW

MILTONIA × BLEUANA NOBILIOR.

(*See page 355.*)

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THE ORCHID REVIEW

An Illustrated Monthly Journal

DEVOTED TO ORCHIDOLOGY

VOLUME II

1894

Mo. Bot. Garden,
1895.

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CHARLES DARWIN

[Subscriptions for 1894 are now due.

VOL. II.] JANUARY, 1894. [No. 13.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	1
Lælio-cattleya × albanense	2
Orchids of 1893	3
Cattleya Victoria-Regina	7
Lycaste × Imschootiana	8
Lælia × Finckeniana (Fig. 1) ...	9
Lælia Gouldiana (Fig. 2)	10
Lælia anceps Sanderiana (Fig. 3) ...	11
Cypripedium venustum Measuresianum	11
Orchids in the Jungle	12
Miltonia × Bluntii var. Peetersiana ...	13
Cultural Notes on Bollea and Pescatorea	14
Lælia Eyermaniana	15
Lælia furfuracea var. Ashworthiæ ...	16
Pleione maculata alba	16
Cypripedium Mastersianum (Fig. 4)	17
Orchid Hybridisation	18
Calanthe × Veitchii as a wild plant ...	19
Do Cypripediums sport?	20
The Hybridist	21
Lælio-cattleya × Eumæa	21
Lælio-cattleya × Statteriana ...	21
Lælio-cattleya × Pallas	21
Masdevallia × Doris	22
Cypripedium × Allanianum ...	22
Cypripedium × Eyermanianum var. Hermione	22
Calendar of Operations for January ...	23
Orchid Portraits	27
Continental Notes	28
Orchids at the Royal Horticultural Society	29
Correspondence, etc.	32

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All communications and Books for review, should be addressed :—The EDITOR OF THE ORCHID REVIEW, Lawn Crescent, Kew, and should be sent as early in the month as possible.

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THE ORCHID REVIEW.

VOL. II.] *JANUARY*, 1894. [NO. 13.

NOTES.

AT the commencement of this our second volume we take the opportunity of wishing our numerous readers a Happy New Year. May our favourite Orchids flourish during the coming year more than in the one that is past, and may our second volume show a marked improvement on the one which preceded it! No effort on our part shall be wanting to secure this desirable end. And we appeal to our readers to assist us by sending interesting notes and specimens, and by making the work known as widely as possible, both of which will materially aid in accelerating its progress.

One interesting feature of our first volume, to which attention has already been called elsewhere, is that it contains a record of the History of Orchid Hybridisation from its commencement down to the present date, and the origin and parentage of the different hybrids can be readily ascertained by means of the Index.

At the time of going to press we have not yet received the programme of the Royal Horticultural Society for 1894, so that we cannot indicate the date of the January meeting of the Orchid Committee.

Mr. H. A. Burberry, who has charge of the splendid collection of the Right Hon. J. Chamberlain, M.P., at Highbury, Moor Green, Birmingham, who will contribute our Calendar of Operations for 1894, is about to publish a book entitled *The Amateur Orchid Cultivator's Guide Book*, its object being to give plain, simple, and fully written instructions suitable for young beginners in Orchid culture, who often experience great difficulties at the commencement. The price is half a crown. We cordially wish it success.

It is announced that Count Oswald de Kerchove de Deterghem, President of the Royal Agricultural and Botanical Society of Ghent, is about to publish a work entitled *Le Livre des Orchidées*, which will form a companion volume to the author's work on Palms.

The *Journal des Orchidées*, whose announced suspension was alluded to in our previous issue, is to be continued as usual, as we learn from its issue of December 15th last.

Consul F. C. Lehmann's Herbarium has been acquired by the Trustees of the British Museum, and will find a home in the Natural History Museum, South Kensington. Many new and interesting Orchids have been discovered by Consul Lehmann, chiefly in Columbia and Ecuador.

A curious malformation of the flowers of Cattleya labiata has appeared in the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, in which the two lateral sepals have simulated the lip in form and colour, and the dorsal sepal has become a petal. Thus the flowers have three petals at the top and three lips underneath. It was imported by Messrs. F. Sander and Co., of St. Albans. The same form has also appeared with T. W. Browning, Esq., Carass Court, Co. Limerick. All the flowers on both leads of the plant are alike.

An unusually fine specimen of Phalænopsis grandiflora is recorded in the pages of the *Gardeners' Chronicle*, by "G. W. E., Henham," which carries a spike of forty expanded flowers, each over three inches in diameter, and some unopened buds. A plant of P. Schilleriana has also produced two flower-spikes, each of which bears a young plant. These have been mossed round, and when rooted will be cut off and grown in the usual way.

LÆLIO-CATTLEYA × ALBANENSE.

At a meeting of the Orchidéene of Brussels, held on December 10th last, a plant was exhibited by Messrs. Linden, L'Horticulture Internationale, Brussels, under the name of Lælio-cattleya × Stchegoleffiana, and received a First-class Diploma of Honour. It was noted as a supposed natural hybrid between Lælia tenebrosa and Cattleya labiata. It was also exhibited at the meeting of the Royal Horticultural Society on December 12th. The plant is evidently a good variety of Lælio-cattleya × albanese (*Orchid Review*, i. p. 339), introduced by Messrs. F. Sander and Co., from Bahia, and a natural hybrid between Lælia grandis and Cattleya Warneri. C. labiata and L. tenebrosa do not grow together, and the latter with C. Warneri yields Lælio-cattleya × Gottoiana (*l.c.*, p. 338). It is a handsome plant, and its appearance in another collection is interesting.

R. A. R.

ORCHIDS OF 1893.

THE novelties of 1893 have been rather numerous, as our pages month by month have indicated, and, in conformity with custom, we may now glance at the more important ones, beginning with species, and then passing on to hybrids, which latter seem to increase in number and importance every year.

Among the species the most important event of the year is the discovery and introduction of the very distinct and handsome Cypripedium Charlesworthii (of which a coloured plate appeared in our last number), by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford. With the general habit of C. Spicerianum and a new and unexpected colour in the dorsal sepal, it is sure to become a very popular garden plant. Phaius roseus, which flowered among the plants brought home by the Earl of Scarborough, is a small species with light rose-coloured flowers and a very interesting addition to the genus. It is now known to be a native of Burmah. Lycaste cinnabarina is another very striking species, now introduced from Peru by Messrs. Linden, L'Horticulture Internationale, Brussels, though dried species were collected by Warscewicz forty years ago. Maxillaria striata is a large-flowered Peruvian species introduced by the same firm. Selenipedium Sargentianum was introduced from Pernambuco by Messrs. F. Sander and Co., of St. Albans. This firm also distributed an importation of the remarkable Eulophiella Elisabethæ, which, though not strictly speaking a new plant, had not previously been put into commerce. Its history has been referred to on more than one occasion in our pages. Stanhopea Lowii and its white variety Amesiana were introduced from the Cauca by Messrs. Hugh Low and Co., of Clapton. Brassia Lewisii was introduced by Messrs. W. L. Lewis and Co., of Southgate, who also introduced Cynorchis grandiflora. Gongora Charlesworthii was introduced by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford. Oncidium unicolor appeared with Mr. William Bull, of Chelsea, some years ago, but has only recently been described.

Several interesting things have flowered in private collections. Cirrhopetalum robustum is a very remarkable species which flowered in the collection of Colonel Trevor Clarke, of Daventry, having been introduced by that gentleman's nephew, Captain Clarke, from New Guinea. Lælia Lucasiana flowered both with Sir Trevor Lawrence, Bart., of Burford, Dorking, and C. J. Lucas, Esq., of Warnham Court, Horsham. It is now said to have been introduced by Messrs. F. Sander and Co., from Brazil. Aërides platychilum and Masdevallia Burbidgeana both flowered in the Royal Botanic Gardens, Glasnevin, under the care of Mr. F. W. Moore, A.L.S., the latter having been introduced by Messrs. Sander; Lycaste Rossiana appeared in the collection of H. J. Ross, Esq., of Florence, Italy, its origin being unknown.

A number of others described within the year must be classed as botanical Orchids, though several of them are very interesting and pretty. The following five flowered at Kew:—Angræcum bistortum, Sarcochilus muscosus, Megaclinium minutum, Bulbophyllum vitiense, and B. viride. Three flowered at Glasnevin; namely, Physosiphon Lindleyi, Pleurothallis puberula, and Pelexia maculata, the latter having been introduced by Messrs. Hugh Low and Co. Several others flowered with Messrs. Linden, of Brussels, as follows:—Neodryas Sacciana, a very interesting little plant, Oncidium zonatum, Cœlogyne borneensis, C. tenuis, Cirrhopetalum Brienianum, and Bulbophyllum longispicatum. From Messrs. F. Sander and Co. came — Bulbophyllum Sanderianum, Epidendrum Laucheanum, and E. pumilum. Messrs. Hugh Low and Co. flowered Luisia Amesiana and Epidendrum tricolor. Habenaria cinnabarina is an interesting Madagascar species which flowered with Messrs. W. L. Lewis and Co., while Pleurothallis rhombipetala appeared with Messrs. Charlesworth, Shuttleworth and Co. The following three species flowered in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking:—Bulbophyllum racemosum, Oncidium luteum, and Polystachya Lawrenceana, the latter having been imported by Mr. J. O'Brien, of Harrow-on-the-Hill, who also flowered it. Polystachya imbricata and Bulbophyllum spathaceum flowered with Mr. O'Brien, the latter from Messrs. Hugh Low and Co's importations. Pholidota Lugardii flowered with Sir John Kirk, of Wavertree, Sevenoaks, who received it from Captain Lugard. Saccolabium Mooreanum flowered at Glasnevin, Burford, and Warnham Court, from Messrs. F. Sander's importations; while Eria albiflora flowered with Mr. J. O'Brien and at Kew. A few others which have been described will probably go to swell the already too numerous list of synonyms.

Among new varieties may be mentioned:—Dendrobium nobile Ballianum and D. n. Amesiæ, introduced by Messrs. F. Sander and Co.; Ansellia milotica Rossiana, from the collection of H. J. Ross, Esq., of Florence; Cattleya intermedia picturata, from M. M. Cappe et fils, Vésinet, France; Cypripedium Bullenianum var. Appletonianum, from the collection of W. M. Appleton, Esq., of Weston-super-Mare; Cypripedium insigne Ernesti, from the collection of R. I. Measures, Esq., of Camberwell; and several others.

Five very interesting natural hybrids have appeared, as follows:—Lælia × Finckeniana (see p. 9, fig. 1); Lælio-cattleya × albanense, imported by Messrs. F. Sander and Co.; Cattleya × Patrocinii from M. A. A. Peeters, of Brussels; Miltonia Joiceyana, which flowered in the collection of Major Joicey, of Sunningdale Park; and Oncidium × Wheatleyanum, which appeared with Mr. F. Wheatley, of Ringmore, Teignmouth. The latter was probably derived from O. crispum and O. dasytyle.

The garden hybrids of the year are very numerous, some of them being

from species not previously used by the hybridist, as Cypripedium Rothschildianum, C. Sanderianum, Selenipedium Lindleyanum, Dendrobium bigibbum, D. tortile, D. Ruckeri, Cattleya Lawrenceana, and Disa tripetaloides. A hybrid Vanda must also be added to the list.

Messrs. James Veitch and Sons, of Chelsea, as usual, head the list, with the following:—Calanthe × gigas (F. C.),[1] Cattleya × Chloris (F. C.), C. × Pheidona (A. M.), Cypripedium × Æson, C. × Arete (A. M.), C. × Euryades, C. × Melanthus, C. × Orion, Dendrobium × Æneas, D. × Alcippe, D. × Euryalus, D. × Niobe (A. M.), Lælio-cattleya × Ascania (F. C.), L.-c. × Epicasta (A. M.), L.-c. × Eumæa, L.-c. × Pisandra (F. C.), L.-c. × Statteriana (F. C.), Phaius × amabilis (F. C.), Phalænopsis × intermedia var. Vesta, Selenipedium × Clonius (F. C.), S. × Penelaus (F. C.), and S. Phædra (F. C.).

From the establishment of Messrs. F. Sander and Co., St. Albans, the following have appeared:—Cattleya × Lord Rothschild (F. C.), Cypripedium × Burberryanum, C. × Fausianum, C. × Johnsonianum (F. C.), C. × Joseph Donat, C. × Lawre-conco, C. × Lynchianum, C. × Massaianum (A. M.), C. × mulus, C. × Thayerianum, C. × Umlauftianum, C. × Watsonianum, Dendrobium × Sanderæ, Lælia × Oweniana (A. M.), Lælio-cattleya × Ingrami, L.-c. Krænzlinii, L.-c. × Maynardii (A. M.), and L.-c. × Sanderæ.

Messrs. Pitcher and Manda, of New Jersy, U.S.A., have produced—Cypripedium × Clinkaberryanum, C. × Constableanum, C. × Greyanum, C. × lutescens, C. × Mrs. Warren Hook, and Dendrobium Rœblingianum.

M. Charles Vuylsteke, of Loochristy, Ghent, has raised—Cypripedium × Erato, C. × Eucharis, C. × Germinyanum violaceum, C. × Murillo, and C. × Zampa.

Messrs. Linden, L'Horticulture Internationale, Brussels, have flowered —Cypripedium × Leonæ (A. M.).

Messrs. W. L. Lewis and Co., of Southgate, have raised Cattleya × Ashtoniana and C. × Johnsoniana, both from the same cross.

Mr. James Cypher, of Cheltenham, has raised Dendrobium × cheltenhamense, and D. × Rubens.

Madame O. Block, of Paris, raised Cypripedium × Mauriceanum.

Mr. P. McArthur, Maida Vale, has flowered Cypripedium × Tennyson.

A considerable number have flowered in various private collections, as follows:—

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne — Cattleya × Harold (A. M.), C. × William Murray (F. C.), Cypripedium × Bryan, C.

[1] The parentage of these hybrids is recorded in our preceding volume, and may be readily found by means of the Index. It would take up too much space to repeat them. F. C. and A. M. signify that the plants have received a First-class Certificate or Award of Merit, respectively, from the Royal Horticultural Society.

vexill-Io, Dendrobium Bryan (F. C.), D. × chlorostele Owenianum (F. C.), and D. × Sibyl (A. M.).

C. Ingram, Esq., Elstead House, Godalming—Cypripedium × compactum, C. × L'Unique, C. × T. W. Bond (A. M.), and C. × Vipani roseum.

C. Winn, Esq., Selly Hill, Birmingham—Cypripedium × Edith Winn, C. × Sylvia, and C. × The Duke.

T. Statter Esq., Stand Hall, Manchester—Cypripedium × Ariadne, C. Daviesianum, C. × Statterianum (F. C.), and Lælio-cattleya × Clive.

H. Graves, Esq., Orange, New Jersey, U.S.A. — Cypripedium × Edwardii (A. M.), C. × Hebe, C. × Tacita, and Phaius × hybridus Gravesii.

Sir Trevor Lawrence, Bart., Burford, Dorking—Cypripedium × œnosuperbiens (A. M.), C. × conco-Lawre (A. M.), and Dendrobium × burfordiense.

Captain Hincks, Terrace House, Richmond, Yorks—Masdevallia × Rushtoni, M. × Veitchiano-Estradæ, and Selenipedium × Ainsworthii delicatum.

R. I. Measures, Esq., Cambridge Lodge, Camberwell—Cypripedium × enfieldense var. Hebe, C. × Eyermanianum var. Diana, C. × Ganesa, and C. × Indra.

R. H. Measures, Esq., The Woodlands, Streatham—Cypripedium × Fairieano-Lawrenceanum, and C. × Paris.

W. E. Brymer, Esq., Ilsington House, Dorchester—Dendrobium × Benita and Lælio-cattleya × Brymeriana.

The Royal Gardens, Kew—Disa × kewensis and D. × Premier (F. C.).

The late F. L. Ames, Esq., North Easton, Mass., U.S.A.—Masdevallia × Henrietta, and M. × Rebecca.

M. Jules Hye, of Ghent—Cypripedium × giganteum, and C. × triumphans.

From the collection of the Emperor of Austria, Schönbrunn, near Vienna, Lycaste × schœnbrunnensis.

F. M. Burton, Esq., Highfield, Gainsborough—Cypripedium × suffusum.

The late J. C. Bowring, Esq., Forest Farm, Windsor Forest—Cypripedium × Paulii.

M. Paul Darblay—Cypripedium × corbeillense.

Miss Joaquim, Singapore—Vanda × Miss Joaquim.

G. R. le Doux, Esq., Langton House, East Molesey—Cypripedium × Ledouxiæ.

M. J. Moens, of Lede—Cypripedium × Clotilde Moens (A. M.).

John Riley, Esq., Hapton House, Burnley—Phaio-calanthe × Sedeniana rosea.

Baron Sir Henry Schröder, The Dell, Egham—Lælia vitellina (F. C.).

H. Tate, Esq., Allerton Beeches, Liverpool—Cypripedium × Tryonianum.

G. F. Tautz, Esq., Hanger Hill, Ealing—Cypripedium × Dibdin.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire—Masdevallia × McVittiæ (A. M.).

W. Vanner, Esq., Camden Wood, Chislehurst—Selenipedium × pulchellum.

Captain Vipan, Stibbington Hall, Wansford—Cypripedium × Sanderiano-superbiens (A. M.).

CATTLEYA VICTORIA-REGINA.

We have received several communications respecting this Cattleya, which some of our correspondents regard with very mixed feelings, and having now seen it again we are able to offer some further remarks about it. Two years ago a large number of plants were distributed under this name, by Messrs. F. Sander and Co., of St. Albans, and in May, 1892, one of them flowered in their establishment, whose distinctness and beauty were at once recognised, as it received a First-class Certificate from the Royal Horticultural Society, and the plant was described by Mr. James O'Brien as a new species. But in the following autumn, when the plants began to flower in various collections, great was the disappointment to find an eruption of Cattleya Leopoldi, with some C. granulosa, instead of the coveted novelty. And last autumn a repetition of the same thing occurred. Two plants, however, have proved genuine, and there may be others which we have not heard of. A raceme has been produced in the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, under the care of Mr. Hamilton; and Mr. Stephens, gardener to William Thompson, Esq., Walton Grange, Stone, Staffordshire, exhibited two blooms at the meeting of the Royal Horticultural Society on November 28th last. Mr. Hamilton states that all the other plants have proved to be Cattleya Leopoldi, with short leaves, while C. Victoria-Regina has leaves longer than the bulbs. The imported bulbs are a foot long, the new ones made in this country eight inches, and the leaves ten and a half inches. If this is a constant character it should be an easy matter to pick out the true plants. The imported plant which flowered with Messrs. Sander had lost all its leaves. Mr. Hamilton also remarks that he finds it to do best with Cattleya Mossiæ and C. Mendeli, as in the warmer house the growths are weak, and the leaves fall over on account of their weight, thus injuring the young growths. Several correspondents complain that their plants have proved to be C. Leopoldi, while another has only flowered one plant out of several, but it proved to be only C. granulosa. Another correspondent obtained several plants from another source, claimed

to be C. Victoria-Regina from an earlier importation, but all of them produced flowers of C. amethystoglossa, and may be left out of consideration altogether. What can be the explanation of these curious facts? It is well known that in the Pernambuco district Cattleya Leopoldi, or at least the Pernambuco variety of it, grows in company with C. labiata, and we suspect that C. Victoria-Regina is a natural hybrid between them. Its general resemblance in shape to Cattleya × Harrisii (C. Leopoldi ♀ × C. Mendeli ♂), to C. × Chamberlainiana (C. Leopoldi ♀ × C. Dowiana ♂), and to Lælio-cattleya × elegans (C. Leopoldi × L. purpurata, or the reverse) is too obvious to be overlooked, and its brilliant rose-purple colour with a few deeper spot, no less than the shape, is just what might be expected in a hybrid between the two species named. We do not know if any one-leaved pseudobulbs have been observed. If the plant is a natural hybrid its rarity need not be wondered at, and may long continue. We commend the matter to the attention of hybridists, for the plant is undoubtedly a very handsome one.

Cattleya Victoria-Regina, O'Brien in *Gard. Chron.*, 1892, i. pp. 586, 808, 809, fig. 115 (fig. 116 is a plant of C. Leopoldi, and must be excluded); *Journ. of Hort.*, 1892, i. p. 349, fig. 60.

LYCASTE × IMSCHOOTIANA.

This is a distinct and handsome Lycaste for which M. Alfred Van Imschoot, of Mont-St.-Amand, Ghent, received a First-class Diploma of Honour at a meeting of the Orchidéene of Brussels, on December 10th last. In the report of that meeting it is recorded as a hybrid from "Lycaste Skinneri × Maxillaria nigrescens." It was also included in a group exhibited by Messrs. Linden at the meeting of the Royal Horticultural Society two days later, and received an Award of Merit. The *Gardeners' Chronicle* then (p. 756) recorded it as a new Lycaste from Peru, possibly a natural hybrid. A week later, in figuring a flower (p. 775, fig. 119) they reverted to the first-named parentage, adding that it was raised by M. van Imschoot, and suggesting L. Skinneri and L. cruenta as the parents. These contradictory records are unfortunate, and should be cleared up. We saw the plant on the last occasion, and, knowing nothing of its origin, suggested that it was a natural hybrid between L. Skinneri and L. cruenta, both natives of Guatemala, which probably grow together in some localities. Maxillaria nigrescens is out of the question. The sepals are light greenish fawn colour, spotted with purple, except near the tips, the petals similar, but a little yellower, and the lip yellow, spotted with orange-red at the base and on the callus. The flower is as intermediate between the two species named as it well could be, both in shape and colour. We hope to see the origin of this interesting plant cleared up.

LÆLIA × FINCKENIANA.

THIS beautiful Lælia (Fig. 1) appeared in the collection of C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr. Mr. Milburn). It received an Award of Merit from the Royal Horticultural Society on December 13th, 1892, and was again exhibited at the meeting on December 14th last, when it received a First-class Certificate. Our figure is taken from a flower kindly sent by Mr. Fincken. Its resemblance to a white form of L. anceps will be apparent

Fig. 1. LÆLIA × FINCKENIANA. Fig. 2. L. GOULDIANA (*see* p. 10).
Fig. 3. L. ANCEPS SANDERIANA (*see* p. 11).

on a glance at Fig. 3 (which represents L. anceps Sanderiana), but the flowers are smaller and more numerous, the sepals and petals rather more spreading, the front lobe of the lip differently shaped, the side lobes not meeting above the column (instead of being overlapping), and the very characteristic broad fleshy keel of L. anceps replaced by three narrow acute ones, much like those of L. albida. The other characters pointed out are all modifications

in the same direction, and after a careful comparison of the respective plants side by side, I have no hesitation in saying that Lælia × Finckeniana is a natural hybrid between L. albida and a white form of L. anceps. The plant itself shows the same intermediate character, for though most like L. anceps, yet the bulbs are rather shorter, and some of them show a distinct trace of the ovoid shape of L. albida. The raceme on the former occasion bore five flowers, but on the present one six, the bracts being rather shorter than those of L. anceps, though otherwise similar. The sepals and petals are nearly two inches long, and of the purest white. The ground colour of the lip is also white, but the apical half of the front lobe bears a transverse crimson-purple blotch, and the side lobes are closely striped with radiating crimson-purple lines along the side next the disc. These are closer and more regular than in L. anceps. The keels are yellow on the front lobe, but behind this spotted and marked with crimson-purple, while here the central keel becomes almost or quite obliterated. It is a chaste and very beautiful flower, and extremely interesting because of its natural hybrid origin. Mr. Milburn states that it came out of an importation of Lælia anceps made by the Liverpool Horticultural Company about four years ago, and that two years later it was picked out by Mr. Fincken, on the supposition that it was a natural hybrid, on account of the distinct appearance of the pseudobulbs and leaves. It is likely to remain rare, and at present is only known by the unique plant in Mr. Fincken's collection. It is perhaps the best marked of all the Mexican Lælias of presumed hybrid origin. The characters of Lælia anceps decidedly preponderate, yet the influence of L. albida is seen in the character of the lip and keels, as well as in the smaller and more numerous flowers, and the habit of the plant. It would be an interesting and instructive matter if some of our hybridists would make a few experiments with these Mexican Lælias.

R. A. R.

LÆLIA GOULDIANA.

THIS distinct and handsome Lælia was described as recently as 1888, having been introduced by Messrs. Siebrecht and Wadley, of New York, from whom part of the stock was acquired by Messrs. F. Sander and Co., of St. Albans. Its origin is still a matter of some uncertainty. When originally described the question was raised whether it was a good species, a variety of something else, or a natural hybrid, and Reichenbach suggested that it was possibly derived from L. autumnalis and L. anceps, and the reverse cross of L. × Crawshayana. It comes nearest to L. autumnalis, but the flowers are much brighter in colour, the petals broader, the lip different in shape, and the bracts a little longer. These characters indicate

a slight approach towards L. anceps, but the resemblance is probably deceptive. It is now certain that it exists in considerable quantities, which is against its supposed hybrid origin, and as the numerous plants now in various collections are practically uniform in character, it is probably a distinct but local species. Some of the plants distributed as L. Gouldiana proved to be ordinary L. autumnalis, but whether they were found growing with it has not been recorded, nor has anything definite been published respecting its exact habitat. It is one of the best of the group, and succeeds well when grown with its allies. It is a most beautiful autumn and winter-blooming Orchid, and a plant has been recorded in the collection of Sir Trevor Lawrence as bearing ten spikes and over forty flowers, presenting a mass of glowing colour at a particularly dull season. Our figure (p. 9, fig. 2) is reproduced from a flower kindly sent by Mr. W. Stevens, gr. to W. Thompson, Esq., Walton Grange, Stone, Staffordshire.

Lælia Gouldiana, Rchb. f. in *Gard. Chron.*, 1888, i. p. 41; 1890, i. pp. 169, 171, fig. 28; *Reichenbachia*, ser. 1, vol. ii. p. 23, t. 59; *Orchid Album*, viii. t. 371.

LÆLIA ANCEPS SANDERIANA.

THIS is one of the best-known white varieties of Lælia anceps, but is specially interesting just now, as some such form must have been one of the parents of Lælia × Finckeniana, figured on a preceding page. It was described in 1885, and is said to have been discovered in a new locality on the Pacific coast of Mexico. The flower has the shape of typical L. anceps, but the colour is white with a rose-purple blotch on the front lobe of the lip, which varies somewhat in size and depth of colour. In the flower figured (p. 9, fig. 3), which is from the collection of W. Thompson, Esq., Walton Grange, Stone, Staffordshire, it was small and very light in colour. The figures are exact, being reproduced from a photograph.

Lælia anceps var. Sanderiana, Rchb. f. in *Gard. Chron.*, 1885, i. p. 140; 1887. i. pp. 280, 281, fig. 59.

CYPRIPEDIUM VENUSTUM VAR. MEASURESIANUM.

This is a very pretty albino, in which all the brown and red of the typical form has vanished, also the wart-like spots of the petals, leaving them yellowish green, and the lip yellow veined with green. The dorsal sepal is about as usual. The replacement of the brown and red by yellow and green gives this variety a very bright and attractive appearance, and it contrasts very effectively with the typical form. The plant is in the rich collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, and received an Award of Merit from the Royal Horticultural Society on December 12th last.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from Vol. I. page* 336.)

The Orchids of the Neilgherries and the adjoining ranges of mountains in Southern India are very interesting, and, as the geographical distribution of plants is always worth noting, there is an additional interest in the fact that several of the Orchids in these hills are found in Ceylon.

At the top of Dodabetta, one of the highest points in the Neilgherry range, growing in large masses on the rocks and sometimes on old stunted stems of Rhododendron arboreum, is found the best form of Cœlogyne odoratissima. This plant is also found in Ceylon, but the bulbs are about double the size of those of the Ceylon plant, and the flower spikes correspondingly larger. On account of the delicious scent of its white flowers, it is a plant well worth growing. This species grows best in the coolest house, with the Masdevallias, and, indeed, this is its natural position in an English collection, as in its native home it is not at all unusual to find the plant covered with hoar frost in the morning.

In most of the hill forests in this range Calanthe Masuca, another plant common also to Ceylon, is found. It occurs at from two thousand feet to six thousand feet elevation, and the plants in the higher altitudes are stronger than those growing lower down.

Ipsea speciosa, an Orchid supposed to be confined to Ceylon, is also found in the Neilgherries, on the slopes of the hills at the top of Walla-Ghaut, at about an elevation of four thousand feet. Colonel Beddome was the first to detect this variety as indigenous to India, but I do not know whether he has ever recorded its habitat.

Lower down Walla-Ghaut, at an altitude of about three thousand feet, is found in great quantities Acanthephippium bicolor. This is another Ceylon Orchid, which I think is not noted by Wight as growing in the Neilgherries, and which has, so far as I am aware, not before been recorded as existing in India. It grows high up on the banks of the stream, among the decayed leaves and fallen sticks. Its roots permeate this decayed vegetable matter, and I found it comparatively loose, the roots not attaching themselves to the ground underneath the decayed leaves.

On the huge granite boulders which stand up in great masses in the middle of the Walla-Ghaut river is found, growing in great profusion, Cœlogyne corrugata, a plant we do not often see in English collections, but which is well worth growing. As this Orchid is found where there is a tremendous rainfall, and considerable amount of heat, it is not advisable to grow it in too cool a house. It does very well in the intermediate house in England.

About three thousand feet higher in the same range on the granite precipices is found Cœlogyne glandulosa. This is also a nice Orchid, but very difficult to collect, as it grows on the steepest rocks, clinging in great masses. The plants are always kept wet at the roots by the water running down the face of the rocks. This plant is found where there is frost in winter, but considerable heat in the summer.

The rainfall at Walla-Ghaut is so enormous that all the coffee plantations in this particular locality have been abandoned, ten inches a day being the usual rainfall during the monsoons, a volume of water which carries everything before it directly the earth is disturbed. I hear that the road down this Ghaut now is quite impassable; it was very bad when I last visited it.

It is here that I found growing on the old coffee bushes, in great luxuriance, the Dendrobium album of Wight (see his description in *Wight's Icones Plantarum Indiæ Orientalis*), and as the plants were in grand flower when I came upon it, it was a beautiful sight. Until I got down to the bushes I was much puzzled to make out what strange crop the old coffee trees were bearing. I had previously seen on the eastern slopes of these mountains an inferior variety, which is no doubt Lindley's Dendrobium aqueum, and both plants are now decided to be one and the same Orchid. The difference of rainfall on the two slopes of these hills easily accounts for the difference in strength and habit. The eastern slopes get little rain and the vegetation on that side of the mountains is scant. In many places this annual rainfall being only fifty inches, while the western slopes are saturated by heavy rains, and are densely covered with tropical vegetation of all kinds, the tree ferns (*Alsophila crinita*) being the finest I ever saw.

At Walla-Ghaut also grows a gigantic form of Dendrobium macrostachyum, with stems ten times the size of the Ceylon variety. I may mention as a curious fact that I found Dendrobium macrostachyum in the Andaman Islands, which gives this plant a wider distribution than was hitherto suspected.

Walla-Ghaut is a spot of special interest to sportsmen, as it is the Walla-Ghaut river that leads into the plain below, which is full of wild buffalo.

(*To be continued.*)

MILTONIA × BLUNTII VAR. PEETERSIANA.

This handsome Miltonia appeared in the establishment of M. A. A. Peeters, of Saint Gilles, Brussels, where it flowered a short time ago, as well as on previous occasions. Miltonia × Bluntii, as is now well known, is a natural hybrid between M. spectabilis and M. Clowesii, and the present

one owes its descent to the intercrossing of the same two species. It must therefore be considered as a variety of the same, though a remarkably distinct one. The deep maroon-purple M. spectabilis Moreliana was evidently one parent in the present case, for the hybrid has dull vinous purple sepals and petals, on which the bars and blotches of M. Clowesii may be traced, the intervening spaces consisting of narrow lines of a lighter shade, most distinct when held up to the light. The pandurate lip resembles the type in shape, but the colour is plum-purple, with some radiating lines in front of the disc. The crest is light-yellow, and terminates in front in three keels, of which the central one is the shortest. The column-wings are short and deep purple, and the face below the stigma yellow, terminating in a pair of erect teeth. It is thoroughly intermediate between the two species named, the colour inclining strongly towards M. spectabilis Moreliana, while the shape is rather more like M. Clowesii. It is very handsome.

R. A. R.

CULTURAL NOTES ON BOLLEA AND PESCATOREA.

THESE interesting plants generally prove very intractable under cultivation, and we have therefore the greater pleasure in publishing the two following notes respecting their culture in Italy and in England, feeling certain that if it were better understood they would be more frequently met with in collections; for they invariably attract attention by their distinct colours and singular structure, while some are undeniably handsome. We thank our correspondents for their interesting notes:—

"Bolleas, Pescatoreas and Stenias all flourish with me, and some are constantly in flower—especially Pescatorea Lehmanni, which is almost always in flower. I grow them all in wooden baskets, with drainage of broken potsheds, over which lycopodium-root, chopped roughly and mixed with living sphagnum, is placed, and finally a thick layer of living sphagnum. They are hung up in the East Indian house, close to the glass, near Phalænopsids, are kept well shaded during sunlight, and thoroughly moist. Abundant ventilation must be given, as without plenty of pure air they will not grow. They must also be carefully guarded against thrips.

"I may also mention that I had trouble with *Zygopetalum rostratum*, which hung with the Bolleas, but dwindled away. I then tried it on the back wall, to the north of the East Indian house, behind the Phalænopsids. This house is a long one, and ten feet high—a span running north and south, and on the north side are the boilers. The north end is entirely bricked up, to give the Phalænopsids more warmth and shade. This wall

is very damp, and here Zygopetalum rostratum flourishes, as does also Galeandra nivalis. "H. J. Ross.

"Florence, Italy."

"Having been fairly successful in growing and flowering several Bolleas, a few remarks as to the treatment they receive here may be interesting to your readers. Our plants were imported in July, 1892, and were shortly afterwards potted up into a compost of polypodium fibre and sphagnum moss—three parts of the former to one part of the latter. The pots were thoroughly well drained, and the plants grown close to the roof glass in a low structure with Cattleyas and other Orchids. Ordinary Cattleya temperature suits them. During growth they should be copiously supplied with rain water at the roots, and the atmosphere kept moist, but after the growths are made up the amount of water should be considerably reduced. Some growers find it difficult to keep these plants healthy for many years together, but ours are in good condition up to the present, making strong healthy growth. Bollea Whitei is a free flowering species, having this season eleven flowers on one specimen. B. Patini, which was described at page 322 of the last volume of THE ORCHID REVIEW, is very interesting indeed. "D. MASTERTON.

"Hazelbourne Gardens, Dorking."

[As these plants grow in moist and shady situations, and have no pseudobulbs in which supplies of nutrient matter are stored up, it is obvious that the compost should never be allowed to become dry, even during the period of inactivity. They grow freely enough at home, and there seems no reason why they should not succeed in our Orchid houses, if only the conditions under which they grow in a wild state are borne in mind, and imitated so far as their essentials are concerned.—ED.]

LÆLIA EYERMANIANA.

A writer in the *Gardeners' Chronicle* for November 18th (p. 628) asks if there is any good reason why the plant called Lælia Eyermaniana, by Reichenbach, in 1888, and supposed by him to be a natural hybrid between L. majalis and L. autumnalis, should not be called simply L. furfuracea? We answer, yes! The two plants are quite distinct, and ought not to have been confounded. L. furfuracea is much dwarfer in stature, and the short scapes bear one or very rarely two flowers. It has broad, ovate-elliptical, nearly sessile, acute petals, and acute sepals, while the keels of the lip are covered with a dense white mealiness, not seen in its allies. L. Eyermaniana has tall scapes with numerous flowers, which are usually lighter in colour, less acute sepals, and blunt, rhomboid petals, which are attenuated

towards the base. The two are quite different in general aspect. But there seems to be little grounds for the suggestion that L. Eyermaniana is a hybrid, and still less for the suggested parentage. In the shape of the flower it approaches L. albida, though it is larger and the colour is light rosy purple. It appears to be a good species. L. Marriottiana is synonymous with it.

LÆLIA FURFURACEA VAR. ASHWORTHIÆ.

This is a large and brightly coloured variety of Lælia furfuracea, which has flowered in the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, and for which the above name has been proposed. The sepals, petals, and front lobe of the lip are bright rose-purple, the basal part being paler, and the keels, as usual in this species, covered with a white mealiness. The petals are two inches long, and one and a quarter inches broad. It has the small bulbs, leaves, and short, one-flowered scapes of L. furfuracea, of which it is an unusually well-developed form. Although introduced to cultivation as long ago as 1838, L. furfuracea seems to have always been a rare plant in gardens. It has also proved rather difficult to cultivate, though it will succeed if grown in well-drained pans and suspended near the glass in the cool house. This is an important point, as the plant grows at an elevation of 7,500 to 8,500 feet in the neighbourhood of Oaxaca, Santa Barbara, San Juan del Estado, and other localities in Mexico, but invariably at a very high elevation, where the climate is essentially a temperate one. It requires a light airy position, and an abundance of water during active growth.

PLEIONE MACULATA ALBA.

This is an albino of a very charming little plant, of which a good specimen, with numerous flowers, was exhibited by G. W. Law-Schofield, Esq., of New Hall Hey, Rawtenstall, Manchester, at the Drill Hall, on November 14th last, when it received an Award of Merit. It differs from the type in having lost the deep purple markings on the lip, leaving the flower white with a lemon-coloured disc. There remain, however, a few faint purple lines on the sides of the throat, if the flower is closely examined. It forms a very pretty contrast with the typical form. Yellow seems to be a very persistent colour, as compared with the various shades of purple and crimson, for there are many other albinos in which the yellow disc remains, notably in the various Cattleyas. The present variety is very rare.

CYPRIPEDIUM MASTERSIANUM.

THE subject of our fourth figure is a very rare species which was described by Reichenbach, in 1879, as a plant of Sundaic origin. Materials for description were supplied by Messrs. James Veitch and Sons, of Chelsea, who state that they received the plant from the Royal Gardens, Kew; and here the record seems to be lost. It is allied to C. Bullenianum, Rchb. f., the staminode especially being almost identical in shape and size, though in other respects they are quite distinct. The leaves of C. Mastersianum are very obscurely tessellated; the dorsal sepal much broader

Fig. 4. CYPRIPEDIUM × MASTERSIANUM.

and more obtuse, and the petals more spreading and less narrowed at the base. C. Hookeræ is readily distinguished from both by its far larger staminode, and other characters. C. Mastersianum has a green dorsal sepal, obscurely veined at the base, and a broad yellowish white margin; brownish red petals, which are spotted with black on the lower half of the superior margin; and a light brownish red lip, which is spotted with dull purple on the side lobes; and a light green staminode with darker centre. It is now known to be a native of Java, from whence Messrs. Hugh Low and Co., of Clapton, have imported it. Our figure is reproduced

from a photograph taken by Mr. G I'Anson, of Upper Clapton, and is about three-fourths natural size.

Cypripedium Mastersianum, Rchb. f. in *Gard. Chron.*, 1879, ii. p. 102 ; *Lindenia*, iv. p. 33 ; *Veitch Man. Orch.*, iv. p. 39.

ORCHID HYBRIDISATION.

I AM extremely pleased to see in last month's number of THE ORCHID REVIEW that you intend publishing all practical details that you can gather relative to orchid cross fertilising and hybridisation, so that your readers may learn how to proceed to operate successfully ; and I trust that your hope—that those readers of your magazine who gather experience in their varied attempts will communicate to you the results of their observations—may be realised. I have every reason to believe that this want of knowledge sometimes gives rise to erroneous conclusions—for instance, you have intimated in a former number (p. 17) that it is not possible to cross-fertilise Dendrobium fimbriatum oculatum with another species. My own experience enables me to combat this theory. Some few years back I successfully obtained four or five fine seed-pods, which, when fully ripened, produced good and apparently fertile seed, when viewed through the microscope, from a plant of Dendrobium fimbriatum oculatum crossed with the pollen of Dendrobium primulinum giganteum. Again, I now have ripening on a plant of Dendrobium nobile two fine seed-pods from flowers fertilised with the pollen of Dendrobium fimbriatum oculatum. But although these two attempts have been successful, I had numberless failures when trying to obtain the same result. I found out, however, in the course of my many experiments, that certain conditions were necessary to ensure a good result, the principal one being that the plant should not be shaded in any way, and the fertilised flowers not too exposed to a burning sun. Again, the temperature should not be a low one, or the atmosphere a moist one, as many of my failures were, I found, caused by the damping or turning yellow of the young seed-pod, owing to excess of moisture. When the seed "sets" the plant must be watered constantly and sparingly—constantly in order to cause the pod to swell, and sparingly to avoid excess of moisture from rapid evaporation at the base of the plant. My deductions, therefore, are that for Dendrobium crossing certain things are absolutely necessary—sunlight, a dry atmosphere, and heat.

Some time ago you suggested that an interesting result might be obtained by crossing the Chimæra section of Masdevallia with that containing Harryana, Lindeni, etc. I have effected that. I have obtained seed-pod and seed from M. Harryana crossed with M. bella, and from M. Lindeni crossed with M. Houtteana, but try as I may I cannot obtain any seed-pods the reverse way—*i.e.*, with species of the M. Chimæra group as seed parent.

Again, some people assert that it is impossible to cross Selenipediums with Cypripediums. I, however, have seedlings making sturdy growth of Cypripedium callosum crossed with Selenipedium caudatum. Whether I could obtain the reverse cross is another question. One thing, however, which the above teaches me is, that if different species will not cross one way, they often may the reverse one, and thus a blend of the two "bloods" is still obtained.

I believe some people entertain the idea that Selenipedium × Sedeni is not fertile, either as pollen or seed parent, and yet I fancy that a new hybrid Selenipedium was recently exhibited which had Selenipedium × Sedeni as one of its parents!

There is no doubt whatever that the field for observation of the proper season, temperature, aspect of the plant in the house, atmosphere, best species for seed and pollen parents, is an extensive one, and offers a most fascinating and interesting occupation to the horticulturist who wishes to be in the front rank of successful hybridisers.

STANLEY G. LUTWYCHE.

Eden Park, Beckenham.

The success in crossing Dendrobium fimbriatum oculatum with D. primulinum is interesting, and we hope that on a future occasion seedlings may be successfully raised. But we merely recorded the failure at Burford without stating, or even thinking, it impossible. We have no record of whether it was also used as the pollen parent. Many years ago Messrs. Veitch effected a cross between Cypripedium barbatum and Selenipedium caudatum, and the seedlings appear to be intermediate in character. Long ago they reached their full development, but cannot be induced to flower, though various plans have been tried to induce them to do so. Selenipedium × Sedeni is one parent of the beautiful S. × Schrœderæ, and of some four or five others, as we shall presently show.—ED.

CALANTHE × VEITCHII AS A WILD PLANT.

The beautiful Calanthe × Veitchii flowered for the first time in December, 1859, having been obtained by Mr. Dominy, by crossing C. rosea (then called Limatodes) with the pollen of C. vestita. These two plants grow together in Burmah, and it is a most interesting matter to note that after a lapse of over thirty years the hybrid should have been detected in a wild state. The discovery is due to Mr. Boxall, who observed a plant growing together with the two species in question, which he felt certain was a natural hybrid between them; consequently he secured it and brought it home. It flowered in the establishment of Messrs. Hugh Low and Co., of Clapton, in January, 1893, and is so nearly identical with the artificially

raised one as to leave no doubt of their common origin. The one difference is that the wild plant has a crimson-purple eye, something like C. vestita rubro-oculata, while the garden plant, as is well known, has a white eye. In other respects, shape, size, and colour, the two are practically identical, but the wild plant might be called C. × Veitchii oculata, in order to distinguish it. That Calanthe × Veitchii should occur as a natural hybrid is a very interesting matter, and the wonder is that it was not detected before. It must, however, be remembered that the parent species are so easily propagated in gardens that they are not often imported, and it may be very rare in a wild state.

DO CYPRIPEDIUMS SPORT?

This question is raised in a recent number of the *Gardeners' Chronicle* by "P. W." (1893, ii. p. 753), who mentions a plant of Cypripedium × Dauthieri, The Albino, in the collection of R. H. Measures, Esq., The Woodlands, Streatham, which is continually varying. It is described as bearing the same relation to C. × Dauthieri that C. insigne Sanderæ bears to ordinary insigne. It appears that at one season of flowering this plant will be C. × Dauthieri pure and simple, while at another it will revert to its original character, and become an albino again. Its origin does not appear to be known, but is apparently very near, if not identical with C. × Dauthieri var. Poggio Gherardo, N. E. Br., which originally appeared in the collection of H. J. Ross, Esq., Poggio Gherardo, Florence, Italy, as a sport from C. × Dauthieri, but which Mr. Ross, in a letter just received, accompanied by a flower, states has kept true for five successive years. It may be briefly described as a light green variety, with a slight bronzy tint on the outer half of the petals, and remarkably different from the ordinary form. C. × Dauthieri is curiously sportive, for the variety Rossianum, Rchb. f. (syn. marmoratum, Hort.), in which the flowers are irregularly striped and banded with purple brown, even on the lip, appeared about the same time, or a little previously, in this collection. Mr. Ross has also a third Harlequin-coloured sport, half yellow, half chestnut, which he has called variety Janet Ross. This, too, we have seen, and it is like nothing else among Cypripediums. This sportive character of C. × Dauthieri is very curious, seeing that it has the same parentage as C. × Harrisianum, of which it may be considered a light-coloured variety. Sports may be expected among some of the hybrids of much mixed parentage which are now being raised. The following are references to the forms mentioned above:—

Cypripedium × Dauthieri, var. Rossianum, Rchb. f. in *Gard. Chron.*, 1888, i. p. 425; syn., var. marmoratum, *Rev. Hort. Belg.*, 1889, 241, with plate.

C. × D., var. Poggio Gherardo, N. E. Br. in *Gard. Chron.*, 1891, i. p. 426; *Bull. Soc. Tosc. Ort*, 1891, p. 336, t. 11.

THE HYBRIDIST.

Lælio-cattleya × Eumœa.

Various attempts have been made to cross the Mexican Lælias with the South American Cattleyas, but for a long time without result. At length we have a success to record. Messrs. Veitch succeeded in crossing Cattleya Trianæ with the pollen of Lælia majalis, and the result is seen in the present hybrid, which was exhibited at a meeting of the Royal Horticultural Society on October 24th last.

We have now received the flower from Messrs. Veitch. It is smaller than that of the Cattleya parent, but it has the same general shape. The sepals and petals are clear light rosy mauve, also the side lobes of the lip, while the front lobe of the lip is rosy crimson, with a few small longitudinal purple-crimson blotches on the nerves in front of the disc. The throat contains a large obcordate, pale lemon-yellow blotch, which passes into buff-yellow along the disc. The influence of the Lælia parent is seen in the modified shape and colour. It is very pretty, but apparently not yet fully developed.

Lælio-cattleya × Statteriana.

This is a very handsome hybrid raised in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Lælia Perrinii ♀ and Cattleya labiata ♂. The flower is like a much enlarged and improved edition of the former, the sepals and especially the petals being much broader, owing to the influence of the Cattleya parent. The lip is larger and broader than in Lælia Perrinii, but almost identical in colour. The large white throat forms a most effective contrast with the bright purple front lobe and the somewhat lighter-coloured sepals and petals. It is a great improvement on Lælia Perrinii, with which it can best be compared, owing to the character of the lip. It received a First-class Certificate from the Royal Horticultural Society on November 14th last.

Lælio-cattleya × Pallas.

Lælio-cattleya × Pallas is a very handsome hybrid, for which Messrs. Veitch received a First-class Certificate from the Royal Horticultural Society on December 10th, 1889. It was derived from Lælia crispa ♀ and Cattleya Dowiana ♂. On November 14th last, the same firm exhibited the plant again, which now with increased strength shows decided improvement. It is a great beauty. The plant bore a raceme of three massive flowers. The sepals and petals are very pale yellow suffused and mottled with light blush-pink, the latter being long, falcately curved, and crispo-undulate. The lip is long, beautifully crispo-undulate, and very richly coloured. It approaches C. Dowiana in the latter respect, but the crisped margin is lilac, and the

yellow veins are confined to a small area near the base. In the colour of the petals it recalls certain light forms of Cattleya × Hardyana, especially the one called Massaiana.

Masdevallia × Doris.

Captain Hincks, of Terrace House, Richmond, Yorkshire, has now added to his already numerous successes with this interesting genus. The present one is his second seedling from M. triangularis, the pollen parent being M. racemosa Crossii. We have received a photograph, together with a living flower of the pretty little plant. It combines well the characters of the two parents. In habit it is about intermediate, but the scape is not much longer than the leaves, and, at present, one-flowered. In shape the flower is most like that of the seed parent, as the perianth is half an inch broad and the same in length, while the lobes and tails each measure half an inch. The colour is light orange-red, slightly puberalous with minute iridescent violet hairs, slightly darker on the nerves. The petals are white, with a small brown spot at the base, and the lip white, minutely spotted with brownish violet, and with a brown keel-like cushion at the tip. It is a distinct and elegant little plant, and will probably improve, it is only weak at present. The seed was sown in August, 1890. A second scape has since been produced, which bore two flowers.

Cypripedium × Allanianum.

This new and distinct hybrid was raised in the United States Nurseries, at Short Hills, New Jersey, between Cypripedium Spicerianum ♀ and C. Curtisii ♂. The leaves are broad and short, tessellated with two shades of green, the peduncle about six inches high, and the flower of enormous size, measuring nearly five inches across the petals. The dorsal sepal is broadly rounded, somewhat recurved at the base, and infolded at the apex; the lower half of a greenish colour, through which extend lines of darker green, the mid nerve purple and the upper half white. The petals are broad and spreading, very hairy on the edges, yellowish green at the base, shaded with darker green, and spotted with minute purple spots towards the apex. The lip is very large, longish, and with a wide opening, the colour greenish brown, shaded and lined with much darker green. The staminode is large, roundish, and of a beautiful lilac colour. It is well intermediate between the parents, the lip being most like C. Curtisii, while the dorsal sepal and staminode rather approach C. Spicerianum. It is named in honour of Mr. David Allan, of Boston, Mass., an ardent lover of Cypripediums.

Cypripedium × Eyermanianum var. Hermione.

Another form of Cypripedium × Eyermanianum has appeared, this time

in the collection of Reginald Young, Esq., of Sefton Park, Liverpool. It was raised from C. Spicerianum ♀ and C. barbatum Warneri ♂. The scape is dwarfer than usual, being about six inches high, and the flower brightly coloured, with more white than usual on the dorsal sepal. It is described by Mr. J. O'Brien as C. × Hermione in the *Gardeners' Chronicle*, Dec. 2nd, 1893, p. 682.

CALENDAR OF OPERATIONS FOR JANUARY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE writing of the Calendar of Operations for the ensuing year is an honour which I accepted with some reluctance, being fully conscious of my own inabilities in Orchid culture. On the other hand, however, it gives me pleasure to be able to do all in my power for the present and future welfare of the aristocratic Orchid, as I am always ready and ever anxious to do. I therefore enter on the pleasurable task of stating my experiences to the readers of this valuable journal, trusting they will receive them with the kind consideration which my humble efforts will require.

In the first place allow me to congratulate the Orchid-growing public that we have at length a periodical devoted entirely to the plants we love, and to express the hope that all growers, whether amateur or professional, will from time to time send such valuable information as they may deem important to the welfare of Orchids generally; each giving the other credit for knowing "something"; and each therefore doing something to foster and strengthen the mutual and progressive feeling already existing, and which must necessarily exist if the general success of Orchid culture is to be assured. The amateur can often teach the professional something, and *vice versâ*.

In commencing my Calendar, I feel compelled to reiterate much of what was said by my predecessor last month, as I feel that the importance of such valuable agents as light, air, warmth, and moisture, cannot be impressed too often upon the minds of new beginners. Of course old and experienced growers have already learnt their great value, and the importance of utilising them to the fullest extent, yet with discretion, well knowing the bad results which follow if any of them are abused.

I feel that new beginners, however, who perhaps do not know the character of the plants, are sometimes indifferent to the value of paying strict attention to these details, and it frequently happens that Orchids themselves are the chief culprits, for thus misguiding their would-be cultivator. It happens in this way. The beginning is mostly made (or should be) with strong, healthy, newly imported, or semi-established plants, and it is well known that many of these, such as Cattleyas, Dendrobiums, Oncidiums, and some others, grow freely at first when subjected to almost any

treatment; living, as it were, upon themselves. When this extraordinary vigour is observed, the beginner may be excused for coming to the conclusion that so much talk about air, light, etc., is of little moment, though sooner or later comes the time of reckoning. The plants having used up their native stamina, with no opportunity to replenish it, fall into failing health, and are of but little further service. The grower then may say that Orchids deteriorate under cultivation, and discontinue to grow them, thinking, of course, that no fault could be attributed to the conditions, because once they grew so well. It is well known, however, that but few Orchids deteriorate under favourable conditions.

LIGHT is an important factor. A plant well exposed when it is making growth will not become drawn and make weak pseudobulbs. On the contrary, it will be sturdy and robust, of about the same proportions as growth formed in its native habitat. Often it has a rich ruddy colour, which is health plainly written. Having thus brought the growth to perfection, let us not suppose our duties end here, and allow any position to do for the plant during the dark days of winter. One position may give enough light during summer but insufficient during winter, in which case the plant loses the vitality it has acquired, to regain which a considerable time is occupied during the following spring before the plant can assume its natural functions, which often makes it late in the autumn before growth is completed. Light is of equal importance during rest as when the plant is in active growth. In contemplating the building of new Orchid houses, let light and simplicity of structure be the object in view; while those who grow Orchids in houses built at a period when the value of light was not so well known, should endeavour to rectify the evil by raising the stages during the winter, or resorting to any method which best presents itself to them, so that the plants may get the full benefit of the light.

AIR is another valuable agent, which all good growers allow to assist them in every possible manner. The value of air to build up strong constitutions in the plants cannot be over-estimated. Any reflection as to the best means to procure a circulation of pure fresh air, or work expended thereon, amply repays the cultivator. The application of air, however, depends not so much upon whether the ventilators are on the most scientific principles, or those of a more remote pattern, for their aim and object may easily be defeated if managed by incompetent hands, without thought or system. Inefficient ventilation is often one of the greatest difficulties an Orchid grower has to contend against when leaving his plants for a period to those under him. The facts to bear in mind are, that a continual circulation of fresh air both day and night is advisable; that rarely two successive days admit of its being applied in the same manner; that cold direct draughts must be avoided; and that the atmosphere must remain moist and genial. With simple intelligence, a method is soon hit upon, and it is

usually done by well noting the outside conditions, and ventilating on the leeward side, the top or the bottom, or through the open doors, as may be most advisable. I would advise also that the air having been once admitted, should be allowed free circulation round the plants, which can be secured by having open wood-work stages, and these well up to the light. Any other air-obstructing obstacle in the way, other than closed stages with some moisture-retaining material on them, should be conspicuous by their absence.

WARMTH and MOISTURE, again, may be used and followed by good or bad results. If healthy Orchids are desired, not only should the thermometer indicate the right temperature within a degree or two, but, what is of equal importance, care should be taken to see that the atmosphere is of a genial nature, from which the plants can best draw support and thrive. A dry fiery heat is good to no plant, nor is that close, moist, mildew-producing warmth which can be had by keeping the ventilators closed in order to save fuel. With too great an amount of warmth and moisture fungoid growths in their many forms are produced, while, on the other hand, noxious insects and general debility follow in the train of the other extreme. Aim at the right temperature, and endeavour to maintain it evenly balanced with moisture and air. The winter, however, together with unsuitable houses, brings to many gardeners great difficulties, but difficulties must be surmounted, and where there's a will there's a way.

In case of insufficient hot-water pipes, which require to be made very hot to keep up the temperature, a thick covering should be used outside on the roof of the house, so that less warmth in the pipes will suffice. I have occasionally left the house so covered a whole day in very tempestuous and cold weather, finding it better for the plants than to suffer from cold or excessive fire heat. It is best to have enough pipes, so that it is not necessary to make them too hot.

A nice moist atmosphere is generated by placing over the hot-water pipes, and about six inches above them, a row of slates or tiles, on which is placed from time to time a few undecayed leaves, which, together with the floors and side walls, syringed once a day, will generally give off enough moisture for this time of year.

The temperatures for this month should be as follows:—The Odontoglossum house—Day, 50° to 58°, with sun; Night, 50°; Morning, 45°. The Cattleya, Intermediate, or Mexican houses—Day, 58° to 65°, with sun; Night, 58°; Morning, 53°. The warm or East Indian house—Day, 65° to 70°, with sun; Night, 65°; Morning, 60°.

Watering is an operation which must be done at all seasons with intelligence, and especially so at this time of the year. Those plants which are resting should receive enough only to keep them healthy and from shrivelling, and those which are growing will require but little at this

dull season, especially if the atmosphere and other conditions are well attended to.

I think it is a bad system to be afraid to repot valuable Orchids when they require it, and it should be promptly done when the proper season comes round. Many a valuable Orchid has got into a bad state of health, which takes years to re-establish, through allowing the compost to get into a decomposed state. It is also bad to be continually disturbing the roots of Orchids. When potting is done thoroughly well, the compost should last for two years, sometimes three, in good condition. Very little repotting, however, is needed this month, but a good supply of sphagnum moss and best fibrous peat should be got at hand, and prepared in readiness for use, as the season is close at hand, and then but little time can be spared.

Pleiones are best repotted directly after they have finished flowering; therefore if P. lagenaria or P. maculata are not already done, they should be taken in hand at once, employing a mixture of fibrous loam and peat in equal proportions, adding a little leaf soil and coarse silver sand. Steady the pseudobulbs upon the surface with neat wooden pegs, surfacing the compost between the pseudobulbs with a layer of sphagnum moss. Keep them just moist only at the root, and suspend the pans in a light, cool house. When further advanced, and strongly rooted, Pleiones delight in a liberal supply of water; they grow very well in a very light position in the cool house, but perhaps the intermediate house is preferable.

Odontoglossum crispum, O. luteopurpureum, O. triumphans, and other allied species, if in good condition and thriving, will be producing flower spikes, which must be protected against slugs and thrips. Fowler's tobacco powder is the best to use where thrips are troublesome, and a pinch taken and dusted down the new growths or on the flower spikes effectually dislodges thrips, without causing injury to the plants; neither do slugs care to travel over tobacco powder. Odontoglossum crispum sometimes gives trouble, and refuses to become strong under the kindest of treatment. Under such circumstances do not allow them to linger on. If it is thought that root action is faulty, have no hesitation in repotting the whole, even in this early month. If the ventilation is at fault, give more air at the bottom, and have open wood-work stages, if these do not already exist. The position of the house may not be suitable. Try another, as Odontoglossums are too lovely to linger in the back ground.

Prominent amongst the flowering Orchids in this month will be Lælia anceps, which, like other subjects of the Mexican house, delights in a well-ventilated, bracing atmosphere. Cattleya Percivaliana and C. Trianæ are coming on apace, and should be placed at the warmest end of the Cattleya house, and great and sudden fluctuations of temperature avoided, or the flower buds may turn yellow and fail to appear, or may be deformed to a large extent. The beautiful Dendrobiums will also for the next few

months make a great show, especially those which delight to be and have been rested cool; and I further reiterate my predecessor's remarks respecting these plants—namely, to avoid excitement, either by an over warm temperature, or over much water at the roots, during the time the flowers are coming to maturity, or many may drop off or turn to growths.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

ERIA MEIRAX, N. E. Br. A very singular little Orchid, discovered by the Rev. Mr. Parish in the Moulmein Hills. It is extremely dwarf, with depressed globose pseudobulbs, and a pair of small oblong leaves, which die away before the sessile purple-brown solitary flowers appear. It flourishes on a block in the tropical house. It belongs to the section Porpax.—t. 7329.

EULOPHIA ZEYHERI, Hook. f. A native of S.E. Africa, which flowered with H. J. Elwes, Esq., of Colesbourne, Andoversford, Gloucestershire, in April last. The flowers are large, light yellow, with purple-brown side lobes to the lip and some brown on the hairy crest. It is allied to E. ensata, Lindl.—t. 7330.

GARDENERS' CHRONICLE.

STANHOPEA LOWII, Rolfe. A remarkable species introduced from the Cauca, New Grenada, by Messrs. Hugh Low and Co. It was figured and described at p. 177 of our last volume. S. Amesiana, Hort., is probably a variety of the same.—Dec. 2nd, 1893, pp. 688, 689, fig. 107.

CATTLEYA WALKERIANA, Lindl., VAR. NOBILIOR. A very fine variety, which is excessively rare in gardens and rather difficult to cultivate successfully for any length of time. In the collection of Lord Rothschild, at Tring Park, it has been successfully grown for years by Mr. Hill. The plants are grown in pots, which stand on a ledge of brickwork at the end of the house where Vanda teres is grown, and close to the glass end of the house, where they have plenty of light. Each year they increase in size, and the pseudobulbs, old and young, are stout and plump, and they flower freely. Lælia crispilabia thrives under the same treatment.—Dec. 9th, 1893, pp. 712, 713, fig. 108.

LYCASTE × IMSCHOOTIANA, Hort. (See p. 8 of our present issue.)—Dec. 23rd, p. 775, fig. 119.

GARDENERS' MAGAZINE.

CYPRIPEDIUM × FAIRIEANO-LAWRENCEANUM. This was described at p. 307 of our last volume. A plant bearing a two-flowered scape was exhibited by T. Statter, Esq., at a meeting of the Royal Horticultural Society on November 28th last, and received an Award of Merit. We do not know if

it is from the same source as Mr. Measures' plant.—Dec. 2nd, p. 728, with fig.

JOURNAL OF HORTICULTURE.

LÆLIA ANCEPS AMESIANA.—Dec. 7th, p. 505, fig. 73.

LYCASTE × IMSCHOOTIANA.—Dec. 21st, 1893, p. 549, fig. 79.

LÆLIA × FINCKENIANA. (See p. 9 of our present issue.)—Dec. 21st, 1893, pp. 549, 557, fig. 80.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

AT the December monthly meeting at Ghent M. Jules Hye exhibited a very beautiful hybrid, Cypripedium × fascinator, derived from C. Spicerianum ♀ and C. hirsutissimum ♂, which received a Certificate of Merit by acclamation. The dorsal sepal most resembles C. Spicerianum, and the petals C. hirsutissimum, both, however, being modified, like the rest of the flower. This Orchidist also exhibited a beautiful Lælia Gouldiana.

The Orchidéene of Brussels held a most successful meeting on December 10th, at which fourteen exhibitors took part. A magnificent inflorescence of Cattleya labiata with six flowers was sent from the collection of His Majesty King Leopold II., by Mr. H. Knight, for which a First-class Cultural Certificate was awarded. M. Alfred Van Imschoot obtained a First-class Diploma of Honour for Lycaste × Imschootiana, said to have been derived from Lycaste Skinneri ♀ and Maxillaria nigrescens ♂. Lycaste Lucianiana from the same exhibitor also received a similar reward. It is allied to L. lasioglossa, but has flowers minutely spotted with rose on a light ground. A similar award was made to Lælio-cattleya × Stchegoleffiana, a supposed natural hybrid, exhibited by Messrs. Linden. Cypripedium Parishii × Lowii, from Messrs. Linden, and C. × villoso-Harrisianum, from M. Pourbaix also received the same award. Maxillaria sp. and Catasetum tabulare var. virens, from Messrs. Linden, received Botanical Certificates. Among the Orchids which obtained the award of a First-class Certificate of Merit may be mentioned Cattleya Warocqueana marginata and C. W. flammea, from Dr. Van Cauwelaert; Odontoglossum crispum amplissimum, Cypripedium bellatulum magnificum, Stenia fimbriata, and a group of Cypripedium insigne montanum, from Messrs. Linden; Lycaste Skinneri alba, Cypripedium × selligero-Harrisianum, Oncidium Phalænopsis and Restrepia striata, from M. A. Van Imschoot; Odontoglossum tripudians, from M. de Lansberge; Cypripedium × selligerum, from M. Ch. Van Wambeke; Cattleya labiata and Odontoglossum crispum, from M. de Moerloose; Odontoglossum crispum maculatum, from M. le Comte de Bousies; and O. guttatum sulfureum, from M. M. Vevraet et Cie.

In one of the houses of M. A. A. Peeters, of Brussels, about twenty-five metres long, may be seen at the present time over 3,500 flowers of the beautiful Cattleya labiata, one of them nearly as dark as C. Mossiæ Peetersii. Other good things in flower are: the rare Odontoglossum crispum Peetersii, O. sceptrum superbum, Cypripedium × Senator Montefiore, C. × Niobe, C. × vexillarium superbum, C. × Arthurianum, and others.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By John Weathers.

The display of Orchids at the Drill Hall, James Street, Victoria Street, Westminster, on November 28th, 1893, was less extensive than usual, but nevertheless highly interesting.

W. R. Lee, Esq., F.R.H.S., Beech Lawn, Audenshaw, Manchester, exhibited, besides Cypripedium × Leeanum superbum, the pretty C. × Mary Lee (C. × Leeanum ♀ × C. × Arthurianum ♂), which received an Award of Merit.

Mrs. Haselfoot, Moor Hill, West End, Southampton (gr. Mr. N. Blandford), contributed some fine spikes of Cattleya labiata.

Messrs. H. Low and Co., Clapton, exhibited Cypripedium × Pluto (C. × Boxalli ♀ × C. × calophyllum ♂) and Selenipedium × Ainsworthii.

C. J. Lucas, Esq., F.R.H.S., Warnham Court, Horsham (gr. Mr. Duncan), exhibited the rare and interesting Dendrobium D'Albertisii.

Walter Cobb, Esq., F.R.H.S., Broadwater Down, Tunbridge Wells (gr. Mr. Howes), showed Cypripedium × Cobbianum (C. Lawrenceanum ♀ × C. × Sallieri ♂).

An Award of Merit was given to Cypripedium insigne illustre, shown by R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman). This is a distinct yellowish variety, with deep brown spots on sepals and petals.

Messrs. F. Sander and Co., St. Albans, exhibited several hybrid Cypripediums, among them being C. × Pryorianum (C. × Lathamianum ♀ × C. × Harrisianum ♂), and C. × Lynchianum (C. Spicerianum ♀ × C. × selligerum majus ♂). The pretty Calanthe × Victoria-Regina received an Award of Merit. Its flowers are light blush-pink.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), obtained a First-class Certificate for Lælia anceps Amesiana, having white segments tipped with crimson, and a deep purple-crimson lip. Cypripedium Fairieano-Lawrenceanum (C. Lawrenceanum ♀ × C. Fairieanum ♂) received an Award of Merit, and is much the way of a large C. × vexillarium. A plant named C. × Engelhardtæ seemed to be a pale C. × Leeanum.

A spike of Cattleya Victoria-Regina came from W. Thompson, Esq., F.R.H.S., Walton Grange, Stone, Staffs. (gr. Mr. W. Stevens).

Mr. H. A. Tracey, Amyand Park Nurseries, Twickenham, exhibited Cyperorchis Mastersii.

Messrs. J. Veitch and Sons, King's Road, Chelsea, received an Award of Merit for Cypripedium × Minos (C. Spicerianum ♀ × C. × Arthurianum ♂), and a Botanical Certificate for the remarkable orange-red Habenaria ciliaris, a North American species. Besides these were also shown Selenipedium × Cleola—which improves in size and purity more and more—Lælio-cattleya × Cornelia (L. pumila ♀ × C. labiata ♂), and Catasetum Gnomus, which latter was given an Award of Merit under the erroneous name of C. Darwinianum—a rare and totally distinct species.

An Award of Merit was granted to a beautiful hybrid Calanthe × Mylesii with creamy white flowers, shown by Messrs. B. S. Williams and Son, Upper Holloway.

Considering the season of the year, there was a remarkably fine display of Orchids at the Drill Hall on December 12th, 1893.

E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, sent a specimen of the beautiful Lælia anceps Amesiana.

His Grace the Duke of Northumberland, Sion House, Isleworth (gr. Mr. Geo. Wythes), exhibited a splendid mass of cut Calanthes, for which a Silver Banksian Medal was awarded.

An Award of Merit was granted to Cypripedium × Sallieri aureum, from the garden of J. F. Ebner, Esq., The Woodlands, Beckenham (gr. Mr. A. Waite).

A First-class Certificate was awarded to Lælia Finckeniana, exhibited by C. W. Fincken, Esq., F.R.H.S., Hoyland Hall, Barnsley (gr. Mr. J. Milburn). The plant bore six beautiful white flowers, with a deep purple stain on the lip, and had certainly improved since first shown and granted an Award of Merit on December 13th, 1892 (see p. 9 fig. 1).

H. Hainworth, Esq., F.R.H.S., Kirton, St. John's Park, Blackheath, exhibited a strong plant of the rare Cirrhopetalum ornatissimum, which had only been imported about twelve months. It was certificated on October 24th, 1893.

M. Jules Hye-Leysen, La Coupure, Ghent, exhibited a beautiful Cypripedium × fascinator (C. Spicerianum ♀ × C. hirsutissimum ♂), which received a First-class Certificate. It is the reverse cross of C. × Ceres.

A Silver Banksian medal was awarded to Messrs. Linden, L'Horticulture Internationale, Brussels, for a choice collection. An Award of Merit was given to Lycaste × Imschootiana, a distinct plant with large flowers, having soft greenish brown sepals dotted with purple; clear yellow petals with red spots at base, and a yellow lip with orange-red blotches at the base. A Botanical Certificate was given to Lycaste Luciani, a large flowered species

having pink speckled flesh-coloured sepals; whitish rose-spotted petals, and a rose and white lip with a hairy callus. Odontoglossum crispum Thompsonæ (named in compliment to Mrs. W. Thompson, Walton Grange, Stone, Staffordshire), received an Award of Merit, and was remarkable for the large white flowers with regular blotches of deep red on the sepals. Other noteworthy things in the group were the fine Odontoglossum crispum amplissimum, Lælio-cattleya × Stchegoleffiana, a supposed natural hybrid (see p. 2), with finely shaped flower, Catasetum tabulare var. virens and a good spike of the scarlet Cochlioda Noezliana.

Messrs. Hugh Low and Co., Clapton, received a Silver Banksian medal for a fine group, in which Cypripediums were conspicuous, among them being the new and highly-coloured C. × Smithii (C. Lawrenceanum ♀ × C. ciliolare ♂).

C. J. Lucas, Esq., F.R.H.S., Warnham Court, Horsham (gr. Mr. Duncan), exhibited Cypripedium × Warnhamense (C. Curtisii ♀ × C. philippinense ♂), which is close to C. × Clinkaberryanum, and received an Award of Merit. Plants were also shown of Comparettia macroplectron, two varieties, Phaius maculatus, and Dendrobium infundibulum.

From the rich collection of R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. Chapman), came a beautiful pale-yellow form of Cypripedium venustum, called Measuresianum, which received an Award of Merit, and the remarkable Pleurothallis scapha, which obtained a Botanical Certificate.

Messrs. F. Sander and Co., St. Albans, received a Silver Banksian medal for an attractive collection, in which varieties of Lælia anceps, such as Sanderiana, Percivaliana, Oweniana, Barkeriana, etc., were highly noticeable. An Award of Merit was given to a good specimen of Zygopetalum rostratum. In addition may be mentioned Aganisia ionoptera, Cypripedium × Ridolfianum, C. × Masonianum, Lælia Gouldiana, L. × Crawshayana, and Chysis Oweniana.

Baron Schröder, F.R.H.S., The Dell, near Staines (gr. Mr. H. Ballantine), exhibited fine trusses of the deep-velvet purple lipped Lælio-cattleya × Nysa (L. crispa ♀ × C. Warscewiczii ♂) which received a First-class Certificate, while Brassia antherotes and a huge spike of Cymbidium Tracyanum obtained a Botanical Certificate and a Cultural Commendation, respectively. Cypripedium insigne Sanderæ, C. i. Sanderianum, and C. × Galatea were also shown from the same collection.

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited an unnamed hybrid, obtained from Cypripedium villosum ♀ × C. × œnanthum superbum ♂).

W. Vanner, Esq., F.R.H.S., Camden Wood, Chislehurst (gr. Mr. Robbins), exhibited Selenipedium × pulchellum (S. × grande ♀ × S. × Sedeni candidulum ♂), and C. × Io-Spicerianum.

Messrs. James Veitch and Sons, King's Road, Chelsea, obtained a Silver Banksian medal for a collection of good things. An Award of Merit was given to Cypripedium × Œnone (C. Hookeræ ♀ × C. superbiens ♂); and a Botanical Certificate signified the committee's opinion of the new Dendrobium glomeratum, with drooping clusters of deep shining purple flowers. The following were also shown again: Cattleya × leucoglossa (C. Loddigesii ♀ × C. × fausta ♂) C. × Pheidona (C. intermedia ♀ × C. maxima ♂), Cypripedium × Thersites (C. × Sedeni ♀ × C. Lindleyanum ♂) Dendrobium Stratiotes, Oncidium divaricatum, O. cheirophorum, and a fine specimen of Sophronitis grandiflora.

M. Wells, Esq., F.R.H.S., Bloomfield, Sale, Manchester (gr. Mr. Hinde), exhibited Lælio-cattleya × exoniensis.

F. Wigan, Esq., F.R.H.S., Clare Lawn, East Sheen (gr. Mr. W. H. Young), sent the distinct Cypripedium × Wiganianum supposed to be derived from C. × Harrisianum and C. × Ashburtoniæ.

Messrs. B. S. Williams and Sons, Upper Holloway, received a Silver Banksian medal for a large collection, in which were many fine Cypripediums, as well as the pure white Calanthe × Mylesii, Lælio-cattleya × Blesensis, Lælia anceps and varieties, Oncidium obryzatum, and others.

CORRESPONDENCE, &c.

W. M. Appleton, Esq., Tyn-y-Coed, Hill Road, Weston-super-Mare, sends a flower of the beautiful variety of Dendrobium Phalænopsis, for which he received an Award of Merit on October 24th last. The front half of the lip and upper half of the petals are bright rose-purple, and the sides of the sepals are stained with a lighter tint. The rest of the flower is white. Also a small hybrid Odontoglossum, which must be referred to O. × deltoglossum. The flowers are light sulphur, spotted with chestnut, and the sepals lightly suffused with purple. The other flowers are Dendrobium superbiens and Bulbophyllum auricomum.

C. Eastwick-Field, Esq., Hurst House, Midhurst, Sussex, sends an inflorescence of Odontoglossum grande, in which the two flowers are curiously fused together. The pedicel of the lower flower is united throughout its entire length, first to the peduncle and then to the pedicel of the upper flower, and thus the two flowers are placed back to back at the apex, all the parts remaining free. The other flower is Dendrobium bigibbum.

Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, N. send a flower of Cypripedium × Pitcherianum, Williams' variety, which is a bold and handsome hybrid. Also a flower of a hybrid between Phaius grandifolius and Calantha × Veitchii, which agrees precisely with Phaio-calanthe × Sedeniana var. rosea (*Orchid Review*, i. p. 85).

Mrs. Powers, Swanswell, Coventry, sends a large form of Lælia anceps together with a flower of L. a. Barkeriana.

ERRATA.

P. 359, line 23, for Cypripedium × "Mrs. C. D. Owen" read C. × "Mrs. G. D. Owen."

P. 371, line 8, for Cypripedium × "Chlonius" read C. × "Clonius."

P. 375, line 5 from bottom, for Cypripedium × "Adriadne" read C. × "Ariadne."

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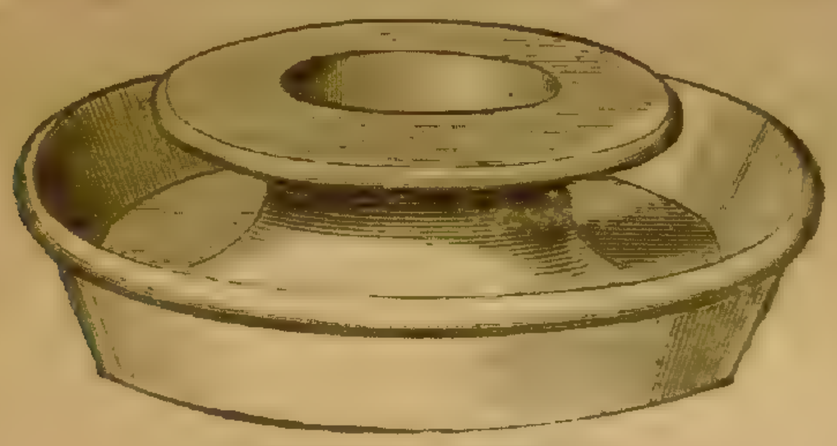

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[Subscriptions for 1894 are now due.

VOL. II.] FEBRUARY, 1894. [No. 14.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	33
Odontoglossum crispum var. Thompsoniæ	34
Dies Orchidianæ	35
The Warnham Court Collection ...	37
Bulbophyllum auricomum	39
Cypripedium insigne Bohnhofianum...	40
Lælio-cattleya × triophthalma ...	40
Cypripedium insigne Sanderæ (Fig. 5)	41
The Hybridist	42
Cypripedium × bellinum, etc. ...	42
Lælio-cattleya × leucoglossa bella...	43
Cypripedium × Tryanowskyanum, etc.	43
Cypripedium × Arthurianum pulchellum, etc.	44
The History of Orchid Cultivation (Part I.)	44
Cypripedium × Io grande (Fig. 6) ...	49
Orchid Hybridisation	50
Novelties	53
Pleurothallis maculata, etc.... ...	53
Scaphosepalum microdactylum ...	53
Masdevallia pusilla	53
Polystachya Buchanani	53
Cyrtopera papillosa	53
Trichocentrum albiflorum	54
Oncidium Sanderianum ...	54
Sobralia pumila	54
Cypripedium Poyntzianum... ...	54
Calendar of Operations for February...	55
Orchid Portraits	59
Continental Notes	60
Orchids at the Royal Horticultural Society	61
Correspondence, etc.	64

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The ORCHID REVIEW is published regularly on the first of each month.

The Editors invite short communications on interesting subjects, which should be written on one side of the paper only, also portraits etc., of rarities.

All communications and Books for review, should be addressed :—The EDITOR OF THE ORCHID REVIEW, Lawn Crescent, Kew, and should be sent as early in the month as possible.

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THE ORCHID REVIEW.

VOL. II.] *FEBRUARY*, 1894. [No. 14.

NOTES.

THE show of Orchids at the Drill Hall, Westminster, on January 16th last, was probably the best ever seen there at this particular season, no doubt owing to the mildness of the weather. Some seventy subjects passed before the Orchid Committee. The leading feature of the show was a splendid group of white forms of Lælia anceps from Messrs. F. Sander and Co., of St. Albans, which bore about two hundred and twenty flowers on sixty spikes.

A particularly fine specimen of Dendrobium × Cooksoni was exhibited by Mr. Perkins, gardener to the Hon. W. F. Smith, M.P., Greenlands, Henley-on-Thames, in a miscellaneous collection of plants, and therefore did not come under the notice of the Orchid Committee. The plant was in splendid health and carried hundreds of its beautiful flowers.

The rare Dendrobium atroviolaceum, which was exhibited by Mr. W. H. Young, Orchid grower to F. Wigan, Esq., Clare Lawn, East Sheen, is a very distinct and beautiful species from New Guinea, for which a First-class Certificate was awarded. The raceme bore eight flowers. Four years ago, when originally introduced by Messrs. Veitch, it was only thought worthy of a Botanical Certificate.

The remarkable Mormodes Rolfeanum was also exhibited by Sir Trevor Lawrence, Bart., Burford, Dorking, and received a Botanical Certificate. The flowers are perhaps the largest in the genus, and of a peculiar lurid reddish purple shade.

The next meeting of the Royal Horticultural Society will be held on February 13th, when the Orchid Committee will meet at the usual hour of twelve o'clock noon.

The October-November number of the *Kew Bulletin*, which appeared some time ago, contains a seventh decade of New Orchids described by Mr. Rolfe, nine of which are in cultivation. They are more particularly noticed on another page.

Mr. Adolphus H. Kent, A.L.S., of Chelsea, has been awarded a Silver Medal by the Veitch Memorial Trustees for his valuable researches in connection with the Manuals of Orchidaceous Plants, and of Coniferæ, published by Messrs. James Veitch and Sons, of the Royal Exotic Nursery.

The figure of Lælia × Finckeniana published in our last issue has aroused a good deal of interest. Flowers have been sent from three different collections which were thought to bear some resemblance to it, but all are white forms of L. anceps. The former is so different in the shape of the lip and keels as to be unmistakable when once seen.

We have the pleasure to announce the marriage of Mr. H. G. Moon, the well-known artist of the *Reichenbachia*, with Miss Sander, only daughter of Mr. F. Sander, of St. Albans. The employés at the nursery presented Miss Sander with a handsome bronze-mounted clock, which bore the inscription, "Presented to Miss Sander on her marriage by the employés of F. Sander and Co., with hearty good wishes from all. Wednesday, January 17th, 1894." The bride carried a bouquet of white Orchids.

The last part issued of the *Orchid Album* completes the tenth volume, and contains a general index to the whole work, which will greatly facilitate its use as a means of reference.

The *Gardeners' Chronicle* for Janury 20th, in alluding to the pretty little Odontoglossum Krameri album in the collection of Walter Cobb, Esq., of Dulcote, Tunbridge Wells, speaks of one plant at Tring Park and another at Burford, "which probably enumerates the number in cultivation." There is also one at Kew, as pointed out at p. 200 of our last volume.

ODONTOGLOSSUM CRISPUM VAR. THOMPSONIÆ.

The varieties of the beautiful Odontoglossum crispum are almost endless, and a large number of them have received distinctive names. O. crispum Thompsoniæ is a form of great merit, for which Messrs. Linden, of Brussels, received an Award of Merit from the Royal Horticultural Society on November 14th last. The flowers are nicely spotted with purple, the petals very broad and beautifully undulated, and the sepals suffused with rosy lilac on the margin. It is dedicated to Mrs. Thompson, wife of W. Thompson, Esq., Walton Grange, Stone, Staffordshire, into whose collection it has passed.

DIES ORCHIDIANÆ.

WHAT a number of interesting events in the Orchid world have followed each other in rapid succession during the last few years. The rediscovery of the long-sought Cattleya labiata, which has quite transformed the aspect of our Orchid houses during the autumn months; the introduction in quantity of the superb Dendrobium Phalænopsis, fortunately as amenable to cultivation as it is beautiful; and the discovery of the three fine Cypripediums, Rothschildianum, Chamberlainianum, and Charlesworthii, which have doubtless secured a permanent place in our collections. The advent of Cattleya Victoria-Regina, C. Alexandræ and Lælia tenebrosa may also be mentioned, though the former has proved disappointing, owing to so many of the supposed plants proving to be something else. Cymbidium Tracyanum is also a superb novelty, whose origin is a mystery, as only a single plant is known—fit companion for the equally mysterious and beautiful Cypripedium Fairieanum. It is evident that Orchids are not yet past the zenith of their popularity.

I confess to feeling a little disappointed in Cypripedium Chamberlainianum. It is certainly distinct enough, and very pretty, but does it quite bear out what was written about it? "Dorsal sepal yellowish white with six rosy-purple lines, . . . petals beautifully spotted with crimson." Why no mention of green, or purple-brown? Another description speaks of "numerous flowers coloured rosy-purple and white, in form not unlike those of C. spectabile," which suggests one of the Sedeni group. The racemes may bear from twelve to twenty flowers or even more on a raceme, but apparently not at the same time. I remember when a fine dried specimen of Masdevallia racemosa was exhibited at the Sale Rooms, its long racemes with a flower at every bract. Why will the plant persist in only producing them one or two at a time, in strict succession? It would be far more imposing if the ingenious collector's idea were carried out in Nature. The moral of it all is, however, that a description should at least bear some resemblance to the plant.

Cattleya Alexandræ has just been mentioned. The following note about it deserves to be reproduced: "This is undoubtedly a distinct species of Cattleya, and while some of the forms are dull and unattractive in colour, others possess all the qualities of a first-rate garden Orchid." This is interesting, as the writer formerly expressed very different views, first suspecting it to be C. Victoria-Regina, and then one of the worst of the guttata group. It is a little perplexing to the ordinary layman when some botanist describes a new plant possessing novel features, and some one else hastens to discredit it. And it must be equally unsatisfactory to the introducer, who doubtless greets such tardy justice with language appropriate to the occasion.

Several interesting novelties have recently appeared from Peru. The brilliant scarlet Cochlioda Noezliana was one of the first, but Stanhopea Moliana, the very distinct Trichocentrum triquetrum, and Maxillaria striata, all afford evidence of a region which has been little touched by collectors. Odontoglossum præstans, though collected here many years ago by Warscewicz, has very rarely been seen in gardens, while the brilliant Lycaste cinnabarina, also met with by the same collector, has only recently been introduced to cultivation. Other interesting things may be expected from recent importations.

The short spell of frost seems to have given place to thoroughly mild weather, and with the gradually lengthening days, and the increase in the sun's power, many Orchids are showing signs of renewed activity. Odontoglossums fairly bristle with flower-spikes, and promise a profusion of their exquisite blossoms—indeed some of the crispums and Andersonianums are already out. What a range of variation they present, more especially the latter! Form and colour, and the size and disposition of the spots, seem to be the subject of endless caprice.

Several species of Phalænopsis will soon be making a brave show, some of them being well advanced, and a few already expanded. Fortunately we have not been much troubled with fogs up to the present. Cattleyas Percivaliana and Trianæ are fast bursting their sheaths, and a few of the latter already begin to brighten up the house. Cœlogyne cristata and its varieties are also pushing their spikes, and will soon be a mass of snowy whiteness. What a brilliant effect it must produce in its native home, where in certain localities the rocks are covered with it! Dendrobiums will soon be a blaze of colour, and for weeks will furnish a succession of bloom. Phaius Wallichii, Lycaste mesochlœna, various Cypripediums, and other plants, are also pushing up strongly, and afford indications of the near approach of another brilliant season.

For the last six weeks I have been revelling in an abundance of Lælia anceps and its numerous varieties. How they do brighten up the house at this dull period! It is curious to note how numerous the white varieties have become during recent years, while formerly the coloured forms alone were obtainable. Schroederiana still seems to be the premier form, while Williamsii and Stella are both very good, the former being noticeable for its purity. Sanderiana seems to be very variable, and some of the forms very good, though not equal to Dawsoni, the earliest known of the white forms. The discovery of this species in a new locality on the Pacific coast gave a great stimulus to its cultivation. Some of the forms run each other very close, and it would be interesting if next year some one would give us an outline of the principal variations.

ARGUS.

THE WARNHAM COURT COLLECTION.

At all times of the year a visit to Warnham Court, Horsham, the residence of C. J. Lucas, Esq., affords the lover of Orchids very great pleasure, as not only are the more showy and gorgeous species and varieties well represented, but the owner, and his head gardener, Mr. G. Duncan, take exceptional interest in botanical beauties and curiosities, to which considerable attention is given.

There are seven houses entirely devoted to Orchids, several being of large dimensions, and well filled, both on roof and stage, with the plants best suited to each. Taking the collection throughout the plants are well cultivated generally, and reflect great credit on Mr. Duncan, who not only has charge of this extensive and valuable collection, but has heavy responsibilities in all other branches of modern gardening.

In one division there is a beautiful display of deciduous Calanthes, consisting of many well-grown plants of C. vestita lutea, C. vestita rubra, and the hybrid C. × Veitchii. Arranged with them were a quantity of well-flowered specimens of the old Cypripedium insigne, intermixed with various Adiantums, the whole group giving the house quite a brilliant appearance at this dull season.

Dendrobiums are well represented here. Many plants at this period are showing well for bloom, and will soon make a fine display. One particularly fine specimen of D. aqueum, generally known as D. album, was especially noticeable, having made thirteen splendid new-flowering stems, with over two hundred flower buds. Another equally well-grown plant, with an abundance of flowers showing, is D. × splendidissimum var. grandiflorum (D. aureum × D. nobile). This beautiful Orchid is certainly one of the best Dendrobium hybrids yet raised; other crosses have been made with the same parents, which produced such pretty examples as D. × Ainsworthii and D. × Leechianum, but neither are equal to the first mentioned, owing no doubt to the fact that only the best varieties were selected of each species that formed the parents of this splendid acquisition. An exceptionally well-bloomed plant of D. Findlayanum was standing out conspicuously among the other inmates, it being one of the best cultivated plants of this species we have seen. In the same house a handsome batch of the showy Australian Dendrobium bigibbum was making a grand show. Intermixed with these were several well-grown plants of D. superbiens, their rich crimson-purple flowers being exceedingly attractive. The beautiful Burmese D. albo-sanguineum, also D. Macræi, D. Wardianum, D. crassinode, D. Brymerianum, D. nobile var. nobilius, D. fimbriatum oculatum, the perpetual blooming D. × Rhodostoma, and many others, were particularly remarkable for their strong healthy condition.

Cypripediums are not general favourites at Warnham Court, but several

noteworthy specimens may be found, including C. × Lathamianum, and a strong piece of the new C. Chamberlainianum which is now sending up a fine spike. Also several Selenipediums, as S. × grande, S. × Sedeni, and its pretty variety candidulum.

We now come to the house where the Phalænopses are cultivated. To these plants special attention has been paid by Mr. Duncan for several years, and now, by steady perseverance, he has found the treatment suitable for them, many at the present time being in luxuriant health. The plants are grown in teak baskets, suspended midway between the roof-glass and the stage. This is covered with small shingle or gravel, in which many small growing plants root freely, as Pilea muscosa, Pellionia Daveauiana, Panicums, and Cyrtodeiras. These little plants throw off a certain amount of moisture, which the overhanging plants seem to revel in, as may be seen by the healthy foliage and strong flower spikes.

In the same house the varieties of Miltonia Roezlii are growing exceedingly well, making clean healthy growths, and quite free from those destructive pests, thrips, which so often attack and injure this tender species.

Saccolabium bellinum, with two strong spikes, Angræcum Sanderianum, with three very fine spikes, A. pellucidum, A. bilobum, A. Ellisii, the sweet-smelling A. fastuosum, and A. Leonis, also the ivory-white A. sesquipedale, are all exceptionally well done. Not often do we see this section of Orchids growing and producing their flower spikes with so much freedom. Vanda Sanderiana is also quite at home in this division.

The cooler or intermediate house contains a miscellaneous collection of plants, too numerous to mention, but amongst which we noted as most prominent was a fine healthy specimen of Cœlogyne cristate hololeuca, which is no doubt one of the most beautiful of white Orchids known. Several plants were in bloom in this house, an Oncidium tigrinum, and Phaius maculatus. Also a pretty little Dendrobium, allied to D. Wattianum (Rchb. f.), which may be described as having a decided resemblance to a small D. infundibulum.

It would require too much space to refer to all the occupants of the Odontoglossum house, though a few may be mentioned as being in flower at the time of our visit. Oncidium cheirophorum, O. ornithorhynchum, O. lamelligerum, Masdevallia amabilis, M. Davisii, M. polysticta, and especially noticeable was a neat specimen of M. tovarensis with about forty spikes, the majority of them bearing three flowers on each, and on one spike we counted four. Several pans of the scarlet Sophronites grandiflora were very effective, hanging from the roof, among the white forms of Odontoglossom crispum. These latter will soon make a good display, as many are showing well for bloom.

Cattleyas and Lælias are extensively cultivated, rare and superior

varieties only being admitted to the collection. Cattleya Trianæ will in all probability soon make a fine display, as the flower buds are fast pushing up through the numerous sheaths. Lælia anceps and its many white and rose-coloured varieties are well represented.

Several splendid plants of Oncidium Lanceanum were growing freely on the shady side of the house, no disease or spot of any kind being observable. These plants have been here for some considerable time, and at present show no signs of exhaustion. Hopes are now entertained that this species will continue to conform to the rules of artificial treatment.

Here, too, is a large specimen of Platyclinis glumacea, many of the pseudobulbs producing three growth from each; Zygopetalum Mackayi, with five strong spikes; fine plants of Epidendrum radicans, Cœlogyne Dayana, and Ansellia africana. One plant which stands pre-eminent at the end of one house is Sobralia Lucasiana, a variety which we believe to be unique.

Another house is being specially prepared at Warnham Court, under the personal supervision of Mr. Duncan, for the cultivation of Odontoglossum crispum, for which, from its position and internal arrangements, a prosperous future may be anticipated for this delightful cool-growing Orchid.

BULBOPHYLLUM AURICOMUM.

This very graceful little Bulbophyllum is extremely rare in cultivation, consequently we are the more pleased to find that a good plant of it is now flowering in the collection of W. M. Appleton, Esq., Tyn-y-Coed, Hill Road, Weston-super-Mare, and, as that gentleman has well pointed out, it makes a very pretty plant, with its eight or ten gracefully arching spikes of highly fragrant flowers, especially at this dull season. It is a native of Burmah, and the Rev. C. F. Parish states that it is called *Ta-zeen-ban* by the Burmese, and that it is a great favourite with the girls, who put it in their hair, as it is pleasantly fragrant, like new-mown hay. A raceme from Mr. Appleton is nine inches long, and bears thirty-six flowers. The sepals are pure white, four to five lines long, the petals very small, and of the same colour, and the lip bright yellow. It succeeds well on a block in the warm house, treated like a Cirrhopetalum. The bulbs are ovoid-oblong, about three-quarters of an inch apart on a creeping rhizome, and bear a pair of oblong leaves, which are deciduous, and drop off before the time of flowering. Altogether it is a very graceful and pretty little plant, although a "botanical" Orchid.

Bulbophyllum auricomum, *Lindl. Gen. and Sp. Orch.*, p. 50. *Hook. f. Fl. Brit. Ind.*, v. p. 765.

B. Fœnisecii, Parish, ex Rchb. f. in *Bot. Zeit.*, xxiii. p. 99.

Dendrobium tripetaloides, *Roxb. Fl. Ind.*, iii. p. 478.

CYPRIPEDIUM INSIGNE BOHNHOFIANUM.

We have already called attention to several fine and distinct varieties of Cypripedium insigne, and now another very distinct and handsome form has reached us, this time from the collection of Henry Graves, Esq., of Orange, New Jersey, U.S.A. In spite of its long journey across the Atlantic, the flower arrived quite fresh, thanks to skilful packing on the part of Mr. R. M. Grey, Mr. Graves' gardener. It is apparently the variety Bohnhofianum, for it quite agrees with the description of that form (*Gard. Chron.*, 1891, ii. p. 586). In shape it comes nearest to the variety Macfarlanei (Rolfe in *Gard. Chron.*, 1890, ii. p. 655), the dorsal sepal being scarcely over one and a quarter inches broad, but the colour is totally different. The ground colour is bright yellow, but the lower part of the dorsal sepal is of a uniform bright deep brown, and the petals and front part of the lip are also strongly suffused with the same colour. The staminode is rich yellow. The upper part of the dorsal sepal is, of course, white, and there are no spots anywhere about the flower. It is a striking and handsome form, the rich brown colouring and absence of spots give it a thoroughly distinct appearance, and there is nothing with which it can be confused. We do not know anything of the whereabouts of the plant originally described, for unfortunately nothing is stated about its origin.

LÆLIO-CATTLEYA × TRIOPHTHALMA.

Two plants only of this beautiful and very distinct hybrid are said to have been raised, one now being in the collection of Baron Schröder, of The Dell, Egham, the other in that of the late Mr. F. L. Ames, of Boston, U.S.A. A two-flowered raceme from the former has just reached us through the kindness of Messrs. Veitch, who raised it. It was obtained by crossing Cattleya superba with the pollen of Lælio-cattleya × exoniensis, and was described in 1883. The lip is three-lobed, the side lobes smaller and more obtuse than in Cattleya superba, though otherwise similar, and the front lobe broadly elliptical-oblong, and about an inch long. The sepals are light blush-pink, and the petals considerably darker. The side lobes of the lip are as light as the sepals outside, but inside suffused and veined with rose, the tips being deep purple-crimson. The front lobe is of the latter colour, but tipped with white, and a transverse yellow band extends across its base. Thus the characters of both parents are well represented in the hybrid.

Lælio-cattleya × triophthalma, Rolfe in *Gard. Chron.*, 1891, i. p. 802 ; ii. p. 155 ; *Orchid Review*, i. p. 101.

Cattleya × triophthalma, Rchb. f., *l.c.*, 1883, ii. p. 526.

Lælio × triophthalma, *Veitch Man. Orch.*, ii. p. 97.

CYPRIPEDIUM INSIGNE SANDERÆ.

THE history of this beautiful variety—probably the most valuable Cypripedium known—was briefly given at p. 363 of our last volume, and now we have much pleasure in presenting our readers with a portrait of it, which has been reproduced from a photograph kindly sent by R. I. Measures, Esq., of Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. Chapman). It was described by Reichenbach in the autumn of 1888, when it flowered with Messrs. F. Sander and Co., of St. Albans, out of an importation of the so-called C. insigne montanum, which has proved unusually variable. It is simply a

Fig. 5. CYPRIPEDIUM INSIGNE SANDERÆ.

light yellow variety in which only the very faintest trace of spotting remains on the dorsal sepal. On November 14th of that year a small plant with a single growth and one flower was sold by auction at Messrs. Protheroe and Morris' Rooms for seventy guineas, Baron Schröder being the purchaser. The other half of the plant passed into the collection of R. H. Measures, Esq., The Woodlands, Streatham, it is said for the same sum. In the following year the latter plant was divided into two, one half being sold to

Mr. Measures' brother for one hundred guineas. A year later the remainder was divided into three, one of the plants passing into the collection of F. L. Ames, Esq., it is said for one hundred guineas. In November, 1890, Messrs. Sander are said to have been glad to get back one of the remaining plants for the sum of £250. Baron Schröder's plant is said to be still intact. The rarity of the variety, added to its great beauty, naturally enhanced its value, but, being a plant which can quickly be increased, it will doubtless soon become more accessible. Other yellow varieties have since appeared, as Macfarlanei, Sanderiana (figured in our last volume, p. 145, fig. 10), and Ernesti (*l.c.* p. 362), all of them, however, differing from the original one in certain respects.

Cypripedium insigne Sanderæ, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 692, also p. 606; *ibid.*, 1891, ii. pp. 618, 669, fig. 96.

THE HYBRIDIST.

Cypripedium × bellinum.

This is a pretty hybrid, raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from C. × vernixium ♀ and C. × Harrisianum ♂, themselves both of hybrid origin. Its parentage might be briefly expressed thus:—C. villosum ½, C. barbatum ¼, C. Argus ¼. It has much of the general character of C. × vernixium, with the addition of some dark brown spots on the dorsal sepal. The ground colour is very light olive-green, veined and spotted with dark brown, and narrowly margined with white, the sides much reflexed. The petals are horizontal, light shining brown, and obscurely spotted with dark brown towards the base. The lip is rather long and narrow, and light shining brown in front, and the staminode pale with a small green tubercle. As might be expected, the hybrid is most like C. villosum, though modified in shape and colour by the influence of the other species, whose distinctive characters, however, are quite obliterated.

Cypripedium × Crossianum, Castle Hill variety.

This is the result of crossing Cypripedium × Crossianum with the pollen of C. insigne Chantini, and thus, strictly speaking, is not a variety of C. × Crossianum, but an example of a hybrid again crossed with one of its own parents, analogous with Selenipedium × calurum and S. × cardinale. The plant is more yellow than C. × Crossianum, the dorsal sepal having a broad white margin, with some bright purple spots. It was raised in the collection of G. C. Rafael, Esq., Castle Hill, Englefield Green.—O'Brien in *Gard. Chron.*, Nov. 25th, p. 648.

Lælio-cattleya × leucoglossa var. bella.

A very pretty hybrid of rather complex parentage, raised by Messrs. James Veitch and Sons, of Chelsea. It was derived from Cattleya Loddigesii ♀ and Lælio-cattleya × fausta ♂, and its descent may be thus graphically expressed :—

Lælia crispa, Cattleya Mossiæ } Lælio-cattleya × exoniensis ♂
C. Loddigesii ♀ } L.-c. × fausta ♂
C. Loddigesii ♀ } L.-c. × leucoglossa and var. bella.

On November 1st, 1892, the typical form received a First-class Certificate from the Royal Horticultural Society, under the name of Cattleya × leucoglossa. This had rose-pink sepals and petals, and a white lip with some yellow in the throat. The variety bella, of which we have now received a flower, differs in having the front lobe of the lip dull violet-purple above the light yellow throat, in which respect it shows the influence of Lælia crispa. The general shape of the flower is like that of Cattleya Loddigesii, but the front lobe of the lip is rather larger, orbicular, retuse, and elegantly crispo-undulate. Technically the plant is a Lælio-cattleya, and although the Lælia parentage is only represented to the extent of one-eighth, yet there are four small pollen masses in addition to the four large ones, as in other members of the group. The resemblance to Cattleya Loddigesii is easily explained by the fact that this species is represented in the hybrid to the extent of three-fourths.

Cypripedium × Tryanowskyanum.

This is a very pretty hybrid, received from H. J. Hunter, Esq., North St. Andrew Street, Edinburgh, with the information that it was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, between Cypripedium insigne Chantini ♀ and C. × Io grande ♂. The flower is large and well formed, and shows a rather curious combination of colours. The dorsal sepal is spotted much in the way of C. insigne, while the petals and lip recall a light form of C. × Harrisianum in their shining purple-brown colour. No trace remains in the petals of the remarkable spotting of C. × Io, which is rather curious. The effect of the contrast of colour is very pleasing.

Cypripedium × turpe.

A hybrid raised from Cypripedium barbatum Crossii ♀ and C. Argus ♂, in the establishment of M. Godefroy Lebeuf, of Argenteuil.—*Orchidophile*, 1893, p. 169.

Cypripedium × Arthurianum pulchellum.

At page 305 of our first volume, when figuring the interesting Cypripedium × Arthurianum, allusion was made to the variety pulchellum, which also was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea. Through their kindness we have received a flower of each, and can compare them side by side. C. Fairieanum was the pollen parent in each case, but the seed parent of the variety pulchellum was C. insigne Chantini, instead of typical C. insigne. The variety has a proportionately broader dorsal sepal, being only two inches long instead of two and a half inches, as in the type. The spots are fewer in number, nearly twice as large, and rather darker brown. They also extend rather nearer to the apex, and those which occur in the white area are purple instead of dark brown. The petals are also as much shorter as is the dorsal sepal, the nerves rather darker brown, and the spots on the inner half a little larger. The lower sepal is also shorter and broader. In other respects the two are remarkably alike. With regard to C. × Arthurianum typical, we may note that the spots are rather less confluent in lines than in the form shown in our illustration.

Cypripedium × Mrs. Tautz.

This is said to be one of the most beautiful and striking hybrids ever raised, though unfortunately there is no record of its parentage. It is compared with an improved C. insigne Chantini, and from the description is apparently allied to C. × nitens.—O'Brien in *Gard. Chron.*, Dec. 30th, p. 798.

THE HISTORY OF ORCHID CULTIVATION.

Part I.

The History of Orchid cultivation, from its commencement over a century and a half ago to the present time, is an extremely attractive subject, and is crowded with details of the most interesting kind. The circumstances attending their introduction, the various difficulties which had to be overcome before their cultivation was properly understood, and the long roll of illustrious names who have each played their several parts in the drama, all tend to make it one of absorbing interest to every cultivator of Orchids. We have therefore decided to publish a series of articles upon the subject, and hope it will prove as welcome to our readers as the History of Orchid hybridisation, which appeared in our last volume.

The first tropical Orchid which appears to have been cultivated in England was Bletia verecunda. There is a fine coloured plate in Martyn's

beautiful *Historia Plantarum Rariorum* (1728–1735), under the name of Helleborine americana (p. 50). According to Martyn, a dried specimen was sent from Providence Island, Bahamas, to Peter Collinson, in 1731, the sender not being recorded. Collinson, not despairing of there being life in the tubers, sent them to the garden of one Wager, where they were placed in a warm bark bed during the winter, and, recovering health, they produced flowers during the following summer. Miller also gives a representation of the same Orchid in his *Figures of the Most Beautiful Plants*, in 1760 (t. 145).

Two of the North American Cypripediums were in cultivation prior to 1737, when the first edition of Miller's *Gardeners' Dictionary* appeared. In that work we find Helleborine virginianum flore rotundo luteo, the Virginian Lady's slipper with yellow flowers, and H. canadensis sive Calceolus Mariæ, the Canada Lady's slipper; the former apparently representing either C. pubescens or C. parviflorum (the description is not sufficiently explicit to say which), the latter C. spectabile. Miller states that plants of them have been sent to England, which thrive and produce flowers every year. In the second edition of Aiton's *Hortus Kewensis*, C. spectabile is said to have been cultivated by Philip Miller before 1731, but C. parviflorum is only mentioned as cultivated by him in 1759, while the introduction of C. pubescens is ascribed to Sir Joseph Banks in 1790. It is therefore clear that these dates cannot be absolutely relied on.

The last-named work also records Vanilla aromatica as introduced by Miller in 1739, though from Miller's note it is certain that the species was V. planifolia. He received a sample packet, containing pods and branches of the plant. The leaves were all rotten, but the stems, appearing fresh, were planted in small pots and plunged in a bed of tanner's bark, and soon put forth leaves and roots. The plants are noted as difficult to keep alive without their natural support. In his eighth edition, however, published in 1768, he mentions a Vanilla axillaribus, which was sent to him from Carthagena in New Spain (New Granada), and flowered in the Chelsea garden, but, wanting its proper support, it lived but one year. The flowers are described as shaped like those of the Bee Orchis, but longer, the galea or helmet of a pale pink colour, and the labia purple. The date is not mentioned, nor is it clear which species of Vanilla is intended.

In 1789 the first edition of Aiton's *Hortus Kewensis* appeared, in which fifteen exotic species are enumerated as being in cultivation at Kew, besides a number of British ones. They comprise four tropical species, six North American, three South African, and two European. We may here enumerate them, using their modern names in cases where the ancient ones have been superseded. The tropical species are — Bletia verecunda, Epidendrum fragrans, E. cochleatum, and Phaius grandifolius; the North American — Cypripedium spectabile, C. acaule, Liparis liliifolia, Calopogon pulchellus, Habenaria fimbriata, and Arethusa bulbosa; the South African—Satyrium

carneum, S. coriifolium, and Bartholina pectinata; and the European—Serapias Lingua and Nigritella angustifolia.

Before the close of the century about fifty exotic species were in cultivation in England, as may be seen by the second edition of Aiton's work, published in 1813.

Prior to 1758 only three or four exotic Orchids appear to have been in cultivation, but in that year the North American Liparis liliifolia is recorded as cultivated by Peter Collinson; and the beautiful Calopogon pulchellus is said to have been cultivated by William Malcolm before 1771. This also is North American.

The year 1775 appears to have witnessed the advent of the first Epidendrum,—E. conopseum, which was introduced from Florida by John Fothergill, M.D. Two years later Habenaria fimbriata was sent from Canada by William Pitcairn, M.D. In 1778 Epidendrum fragrans is said to have been sent from Jamaica by Francis Goldney, and a year later the European Nigritella angustifolia appeared, being introduced by the Rev. S. Goodenough.

The first Cymbidium imported was the Chinese C. ensifolium, which is said to have been cultivated by John Fothergill, M.D., before 1780. Arethusa bulbosa was sent from North America by William Young, in 1784; and Cypripedium acaule by William Hamilton, in 1786. In the latter year two West Indian species were imported—Epidendrum cochleatum by Alexander Anderson, and Bletia florida by R. A. Salisbury. In 1787 Pogonia divaricata was sent from North America by John Fraser; while Satyrium carneum, S. coriifolium, and Bartholina pectinata were sent from the Cape of Good Hope by Francis Masson, during the same year.

The beautiful Phaius grandifolius was imported from China about the year 1788, by John Fothergill, M.D., and a fine coloured plate appeared in the first edition of Aiton's *Hortus Kewensis* in the following year, under the name of Limodorum Tankervillæ. Orchis papilionacea was also introduced from South Europe in 1788, by John Sibthorp.

In 1789 Cymbidium pendulum was sent from China to Messrs. Loddiges, of Hackney—a firm destined to exert an enormous influence on the cultivation of Orchids in the early part of the present century. Serapias Lingua was also introduced from South Europe during this year by Sir Francis Drake; while the North American Habenaria herbiola is recorded as being cultivated before 1789, by John Fothergill, M.D.

The last decade of the century witnessed a very great development, as no less than twenty-five species were introduced, the number thus being about doubled. Seven species appeared during 1790, all from the West Indies, and five of them representing additional genera. They are as follows:—Ornithidium coccineum, sent by Alexander Anderson; Stenorhynchus speciosus, by Sir John Boothby; Sauroglossum elatum, by

John Fairburn; Lycaste Barringtoniæ, Cœlia Baueriana, and Epidendrum fuscatum, by Lord Gardner; and Epidendrum ciliare, by Edward Elcock. The last-named gentleman added four additional genera during 1791, these also being West Indian, as follows:—Oncidium carthaginense, Pleurothallis ruscifolia, Stelis ophioglossoides, and Isochilus linearis. The European Orchis globosa was cultivated by W. Pitcairn, M.D., before 1792. Nine additional West Indian species appeared in 1793, including four additional genera. Ponera prolifera was sent by Edward Elcock; Broughtonia sanguinea by Walter Ewer; and the remainder by Rear-Admiral William Bligh, as follows:—Brassavola cucullata, Octomeria graminifolia, Epidendrum elongatum (secundum), E. umbellatum, E. nutans, Oncidium altissimum and O. triquetrum. Cymbidium sinense was also introduced about the year 1793, by George Seaton. In 1795 Elleanthus capitatus was introduced from the West Indies by Sir Joseph Banks; in 1796 Spiranthes cernua was sent from North America by William Hamilton, while Habenaria ciliaris, from the same country, is said to have been cultivated by R. A. Salisbury before 1796. Lastly, Pterygodium volucris was introduced from the Cape of Good Hope in 1797, by Sir Joseph Banks.

We may now note a few of the species figured before the close of the eighteenth century, noting the conditions under which they were grown. Miller, in 1768, wrote of the genus Epidendrum, "There are nearly thirty speeies of this genus, which grow naturally upon trees in America and both Indies, but, as the plants cannot by any art yet known be cultivated in the ground, it would be to little purpose the enumerating of them here, though, could the plants be brought to thrive by culture, many of them produce very fine flowers of very uncommon form. I had three species of them sent me from America; these I planted with care in pots, which were placed in a stove, where they came so far as to show their flowers, but the plants soon afterwards perished." Some slight progress was made before the close of the century.

Calopogon pulchellus, which dates from 1771, was again accidentally introduced in 1788, and is interesting as the first Orchid figured in the *Botanical Magazine*. The third volume bears date 1790, and at t. 116 this plant is figured under the name of Limodorum tuberosum. Its history is recorded by Curtis, as follows:—"For this rare plant I am indebted to the very laudable exertions of a late gardener of mine, James Smith, who, in the spring of 1788, examining attentively the bog-earth which had been brought over with some plants of the Dionæa muscipula, found several small tooth-like knobby roots, which, being placed in pots of the same earth, and plunged into a tan-pit having a gentle heat, produced plants the ensuing summer, two of which flowered, and from the strongest of these our figure was taken."

The next plant figured in the *Botanical Magazine* was Epidendrum

fragrans, in 1792. At t. 152 it appears under the erroneous name of E. cochleatum, whence we learn that "Commodore Gardner, in the year 1789, presented to the Apothecaries Company some roots of this plant, taken up with great care, and which being successfully treated by Mr. Fairburn in their garden at Chelsea, one of them threw up a flowering stem last February, from which our drawing was made." It was cultivated in pots of earth composed of rotten wood and decayed leaves, and plunged in a tan bed. The name was afterwards corrected, at plates 543 and 572 of the work.

Cypripedium acaule was figured in the same work in 1793 (t. 192), having flowered with Messrs. Grimwood and Wykes, nurserymen, of Kensington, when planted in pots of loam and bog-earth or leaves, and plunged in a north border. C. album was also given at t. 216 of the same volume.

Cymbidium pendulum was figured at t. 387, in 1797, under the name of Epidendrum aloides. Curtis remarks that "a few years since my friend Mr. Vere, of Kensington, received this plant from India, by the kindness of his neighbour, J. Devaynes, Esq. Placed in a pot of earth, and plunged in the tan-pit of the stove, it grew, increased, and now flourishes, but has not blown. With Messrs. Grimwood and Wykes, nurserymen, Kensington, the plant has flowered this summer; instead of plunging it in the tan, they set it on the flue of the stove, and to the variation in its treatment its flowering is perhaps to be attributed."

In 1799 Epidendrum ciliare was also figured (t. 463), with the following note:—"The rare and singular species here represented, a native of the West Indies, flowered with Mr. Whitley, nurseryman, Old Brompton, in February, 1799, and at irregular periods before that time. He informs us that it is not constant as to the time of its blooming, and that though the plant flowers with him it never assumes a fine healthy green appearance. He propagates it by dividing its limbs or branches, which often put forth small roots. The plant grows in a pot, in a mixture of loam and peat or bog-earth, and is kept constantly plunged in the tan-pit of the stove."

The foregoing details—and we have gone into them pretty fully—show that Orchid culture at the close of the eighteenth century was only in its infancy. Excluding the hardy kinds, which scarcely come within the limits of our subject, we note that the countries from which Orchids came were the West Indies, China, and the Cape of Good Hope. The plants were chiefly brought home by travellers, and by naval and military officers, in slow sailing vessels, in too many cases to be killed soon after their arrival by improper treatment. Orchid culture as we know it was non-existent. A great development took place during the next quarter of a century.

(To be continued.

CYPRIPEDIUM × IO GRANDE.

CYPRIPEDIUM × Io is a very beautiful hybrid, the first one raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne. Its parents are Cypripedium Argus and C. Lawrenceanum, the former being the seed bearer, and its resemblance to both parents is sufficiently obvious, though in general shape and in the markings of the petals the characters of the mother-plant somewhat preponderate. The variety here figured is known in gardens under the name of C. × Io grande, though we do not know if it was raised in the same collection as the original form, on which

Fig. 6. CYPRIPEDIUM × IO GRANDE.

it is considered to be an improvement. Our figure is reproduced from a photograph taken by H. Little, Esq., of The Barons, East Twickenham, from a plant in his collection, which, as is well known, contains a large number of very fine varieties.

Cypripedium × Io, Rchb. f. in *Gard. Chron.*, 1886, i. p. 488 ; *Reichenbachia*, ser. 1, i. p. 51, t. 23 ; *Veitch Man. Orch.*, iv. p. 87 ; *Rev. Hort. Belge*, 1888, p. 13, cum ic. ; *Orchid Review*, i. p. 131.

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Mo. Bot. Garden,
1895.

ORCHID HYBRIDISATION.

THE raising of new Orchids from seed is undoubtedly the most fascinating work in which the cultivator of these charming plants can engage. The gradual maturing of the capsule, the germination of the minute atoms in which so much potential beauty may be hidden, and at length the unfolding of the blooms as the flowering period is reached, are all matters of the deepest interest to the enthusiastic operator. Who can describe the moment when the resulting capsule from some carefully effected cross is seen to be opening, and the operator, lens in hand, examines its contents, and, fearful of finding nothing but chaff, detects a number of plump embryos, each wrapped away in its curiously wrinkled testa? And, after this minute dust is committed to the soil, who shall describe the careful watching for the first signs of germination, and the care bestowed on the young seedlings until the perils of infancy are past? Ask not our Sedens and Cooksons and Maynards; rather let it be described by the humble follower who has just been successful with his first cross.

The interest felt in the subject of Orchid hybridisation is apparent from recent communications to our columns, besides which several other correspondents have expressed a wish that we should publish a series of articles on the subject. With this request we will endeavour to comply, and, as all of our readers are not experts, it will be best to begin at the beginning.

The materials to work with naturally resolve themselves into such as are readily accessible to the operator; plants flowering in his collection at the same time, or, in some cases, pollen may be obtained from a neighbouring collection. The beginner will probably be content to commence with some easy subject, whether the cross has been made before or not, and thus gain confidence. But every cross should be made with some definite object in view, and an effort should be made to break new ground wherever possible. Our last volume furnishes a nearly complete list of the crosses which have flowered up to the end of 1893, and by consulting it many repetitions may be avoided. Some good hybrids, however, are excessively rare, and the crosses might with advantage be repeated.

The next question is how to proceed. If any of our readers should not be familiar with the structure of an Orchid flower, they should pull two or three to pieces, and thus familiarise themselves with it, for the details are so different from those of an ordinary flower—a lily for example—that at first sight the stamens and pistil would appear to be wanting altogether. But the veil of mystery has long been rent asunder, and the old-time gardener who grew Orchids and Cacti because they were "the only plants that those fiends the hybridists could not touch," no longer hugs his fond delusion. The stamens and pistil are present, but changed out of all knowledge, being united into one fleshy body called the column. Two distinct types of

structure will be observed—the one peculiar to Cypripedium and Selenipedium, the other common to the great bulk of the order.

The column of Cypripedium consists of the large shield-shaped staminode, or sterile stamen, in the centre of the flower, a second shield-shaped organ underneath, which is the stigma, and a pair of small roundish stalked bodies situated at the basal openings of the lip, which are the stamens. The latter organs secrete a sticky brownish or yellowish substance, the pollen, consisting of single grains immersed in a glutinous fluid, which must be removed and smeared on the stigma in order to effect fertilisation.

In other Orchids the structure of the column is very different. Here we find a single fertile anther situated at the top of the column, and the pollen grains variously aggregated in masses, the pollinia, which are generally hidden under a little cap, the anther-case. On the face of the column near the top will be observed a little cavity, covered with a sticky exudation, and this is the stigma. The anther-case may be detached by a slight touch, and if the pollen masses be applied to the stigma, they will adhere firmly to the sticky surface.

It is well known that the majority of Orchids are incapable of self-fertilisation, and that in a state of nature they are dependent on the visits of insects, who, in search of food, involuntarily carry the pollen from flower to flower, leaving it on the stigma, where required. The hybridist, though with a different object in view, still works in the same way.

Assuming, then, that the necessary materials are at hand, we may next describe the operation. The flower intended as the seed-bearer should first have the pollen carefully removed, which may be effected by means of a pair of forceps or a pointed pencil or stick. Care should be taken not to injure the remaining parts, also that the pollen does not come in contact with the stigma. Now take the pollen from the second flower, place it on the stigma of the first, and that stage of the work is complete. The reverse cross may be effected at the same time if the pollen from the first flower is laid aside until the second one is ready to receive it.

It is very important that the details of every cross should be carefully recorded, and a small pocket-book should be kept for the purpose. The crosses should be numbered consecutively, and a small ticket with the corresponding number tied on to the stalk of the fertilised flower. Opposite the number in the pocket-book should be recorded the date of the cross and the seed and pollen parents, then a space should be left for future use, such as date of sowing the seed, etc.

Now comes a period of waiting, during which the chief thing necessary is to keep the plant healthy, avoiding checks and over-stimulation, so that the capsule with its contents may mature properly. A certain percentage of crosses will fail to take, and this may be large when experimenting

with very distinct species, but the enthusiast will not be deterred by a few failures, which will only stimulate him to renewed exertions. Perseverance and a good stock of patience will prove of the utmost service to the Orchid hybridist.

The selection of parents is a most important matter, and one in which there is room for the exercise of much individual taste and judgment. A few cardinal points, however, should always be kept in view. The object of the hybridist is, or should be, to raise a plant which in some respects shall be an improvement on its parents or shall exhibit some new and attractive feature. It may be desirable to introduce increased vigour into some particular plant, by crossing it with another which has the desired quality. Generally speaking this is best effected by using the stronger grower as the seed parent, though this rule is not an invariable one. None but healthy, well-established plants should ever be used as the seed parent; and the best possible varieties of both should always be selected. Colours which neutralise each other are also best avoided. Several examples might be cited in this connection, but one will suffice:—Cattleya citrino-intermedia was derived from the species whose name it bears, and though extremely interesting because of the great difference between the parents, is not very attractive in point of colour.

A few groups single themselves out for special mention. Thus Sophronitis grandiflora might be crossed with almost any of the Cattleyas and Lælias which flower at the same time of year; and the same may be said of the rare and remarkable Lælia Digbyana. L. pumila is also a very promising parent. Cypripedium Fairieanum has been used many times, and always with good results; while C. niveum, C. concolor, and C. bellatulum are also very promising plants for further experiments. Selenipedium Schlimii has been a potent factor in the development of those charming plants S. × Sedeni and its allies, of which more will yet be heard. Dendrobium nobile has a very good record in this respect, also Cypripedium Spicerianum, and a variety of others could easily be enumerated.

Several recent introductions are worthy of attention, on account of good qualities they possess; indeed, we believe several crosses have been made which may yield noteworthy results.

A considerable number of hybrids have themselves been used as parents, and from the best of these, combined with judicious selection, some striking acquisitions may be anticipated. Much as has been done, we believe that Orchid hybridisation is yet in its infancy, and the next few years may witness some remarkable developments among the thousands of seedlings now progressing towards the flowering stage in various collections.

(*To be continued.*)

NOVELTIES.

PLEUROTHALLIS MACULATA, Rolfe.—A small Brazilian species presented to Kew by Messrs. Shuttleworth, Carder and Co., of Clapham, which flowered in September, 1891, and again subsequently. It is allied to P. recurva, Lindl., of the section Brachystachyæ, and has short racemes of purple flowers. The leaves are irregularly spotted with purple, in allusion to which the name is given.—*Kew Bulletin*, 1893, p. 334.

PLEUROTHALLIS UNISTRIATA, Rolfe.—A very small species allied to the Guatemalan P. marginata, Lindl., belonging to the section Apodæ cæspitosæ, which has flowered at Kew on several occasions. Its origin is not recorded. The flowers are semipellucid white, with a purple mid-nerve to the petals and some similar colour on the lip.—*Kew Bulletin*, 1893, p. 334.

PLEUROTHALLIS PERGRACILIS, Rolfe.—A native of British Honduras which has been cultivated at Kew for a long period. It is allied to the preceding, though quite different in various structural details. The flowers are light yellowish white, with a purple mid-nerve to the petals.—*Kew Bulletin*, 1893, p. 334.

SCAPHOSEPALUM MICRODACTYLUM, Rolfe.—A singular little plant, allied to S. ochthodes, Pfitzer, which flowered at Kew during 1890, and again last October. The flowers are light greenish yellow with a suffusion of light purple-brown on the upper half of the dorsal sepal. The tails are very minute—hence the name.—*Kew Bulletin*, 1893, p. 335.

MASDEVALLIA PUSILLA, Rolfe.—The smallest-flowered species of the Saccolabiata group at present known. It flowered at Glasnevin in August, 1891, under the care of Mr. F. W. Moore, and on subsequent occasions. It is allied to M. troglodytes, E. Morr., and has pale yellowish green flowers densely speckled with dark purple-brown.—*Kew Bulletin*, 1893, p. 335.

POLYSTACHYA BUCHANANI, Rolfe.—A native of the Zambesi district, E. Tropical Africa, whence it was sent to Mr. James O'Brien, of Harrow-on-the-Hill, by Mr. John Buchanan. It flowered at Glasnevin in September, 1889, and on subsequent occasions. It is allied to the well-known P. luteola, Hook., from Tropical America, and the Mascarene P. mauritiana, Spreng., of which it may be considered as the geographical representative.—*Kew Bulletin*, 1893, p. 335.

CYRTOPERA PAPILLOSA, Rolfe.—A Natal species recently imported by Mr.

James O'Brien, though known long before from dried specimens. It flowered in the collection of Sir Trevor Lawrence, Bart., at Burford, in August, 1892. The side lobes of the lip are purple-brown and the rest of the flowers yellow. —*Kew Bulletin*, 1893, p. 336.

TRICHOCENTRUM ALBIFLORUM, Rolfe.—A curious little species sent to Kew, from Mexico, by Mr. Finck. It flowered in the collection in September, 1892, and again last year. It is allied to the Guatemalan T. candidum, Lindl., being the only other species in which the spur is reduced to a very short sac.—*Kew Bulletin*, 1893, p. 336.

ONCIDIUM SANDERIANUM, Rolfe.—A handsome Peruvian species belonging to the section Microchila, and allied to O. annulare, Rchb. f., and O. monachicum, Rchb. f., which have the peculiarity that the petals remain clasped together by their crisped tips, forming a ring. The flowers are chocolate-brown and yellow, and bear some resemblance to those of O. falcipetalum, Rchb. f. Plants have recently been imported by Messrs. F. Sander and Co., of St. Albans, but have not yet flowered in cultivation.—*Kew Bulletin*, 1893, p. 337.

SOBRALIA PUMILA, Rolfe.—An unusually dwarf species, native of Marajo Island, Brazil, of which a dried specimen has been sent to Kew by E. S. Rand, Esq., of Pará. It forms small tufts, scarcely six inches high, the flowers being bright canary-yellow and produced in profusion. It is allied to the New Granadan S. fimbriata, Lindl.—*Kew Bulletin*, 1893, p. 337.

CYPRIPEDIUM POYNTZIANUM, O'Brien.—This appeared among imported specimens of C. callosum, Rchb. f., in the collection of Reginald Young, Esq., of Sefton Park, Liverpool, after whose gardener it is named. It is suggested as being a natural hybrid between C. callosum and C. Hookeræ—the one from Siam, the other from Borneo, by the way. It would be interesting to know how the pollen was got over. From the description, it is probably C. callosum var. sublæve, Rchb. f. (*Gard. Chron.*, 1888, i. p. 331), and C. siamense, Rolfe (*l.c.*, 1889, i. p. 192), the latter being the correct name, for the plant is quite different from C. callosum, Rchb. f.—especially in the shape of the dorsal sepal and petals—and is nearer C. javanicum, Rchb. f. C. callosum var. sublæve, Rchb. f., is only vaguely defined as "a callosum without any calli on the disc," but the type specimen, which is in the collection of R. H. Measures, Esq., The Woodlands, Streatham, shows what was the plant intended.—*Gard. Chron.*, Jan. 13th, p. 36.

CALENDAR OF OPERATIONS FOR FEBRUARY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperatures for this month should remain as advised for last, except that a rise of a few degrees, with sun-heat should be allowed, as the sun gains more power. It will also now generally be necessary to damp down twice a day, and especially so during bright, clear weather, and when a large amount of fire-heat is required. A good deal of caution should be exercised at this season when giving air, remembering that we are now entering upon a period when cold winds and bright sunshine are apt to come simultaneously, thus rendering the possibility of injury by cold draughts extremely great; also, that Orchids, in consequence of darkness and general confinement during the winter months, are more susceptible to injury from this cause now than at any other time.

POTTING.—There are many plants that may now be potted or top-dressed as the case may demand, and this work should be pushed on where it is possible to do so. Time may then be had to do such work thoroughly well, which is a great point in favour of good cultivation, and the importance of well and carefully potting an Orchid must never be under-estimated. I have yet to learn of a better potting compost than good English peat and sphagnum moss, in equal parts, with a small proportion of broken charcoal; and, except where otherwise mentioned, it is to these materials that I refer when mentioning the subject of potting. It sometimes happens, however, that one gets such rubbish under the name and price of best Orchid peat, that he is tempted to try anything which may be recommended as a substitute. Polypodium roots are largely advocated, but this material should not by any means take the place of good fibrous Orchid peat.

The plants of the East Indian house should now be overhauled, giving new sphagnum moss to such species as Aërides and Saccolabium. Those Cypripediums which have passed out of bloom may also be potted. This genus delights in a compost of rather more body than most Orchids require. For instance, the peat need not necessarily be of the best fibrous quality, and a small portion of fibrous loam may be used, with a few not too much decayed leaves, some coarse silver sand, and broken charcoal should be added, to keep the whole porous. These materials, of course not omitting the sphagnum moss, make a good compost in which to grow the majority of Cypripediums. C. bellatulum and the near allied species are exceptions to this rule, growing better if given a mixture of stiff, yellow loam and small lumps of chalk. I remember once being highly recommended to mix broken bones with the compost and crocks of Cypripediums, but I have found they cannot be employed with any certainty of success, the result being most uncertain, as decaying bones are much too powerful for Orchids in general.

The Phalænopses may also be gone through and removed this month. It is not advisable to ruthlessly pull these plants away from the baskets in which they are so firmly established, unless there are good reasons for so doing, but the old moss must be carefully removed from between the roots, and sweet new moss again carefully worked in. Should any plant prove to be in poor condition, not having its roots firmly fixed to the teak rods, it may be taken out and placed in another basket, without fear of causing a check. It would most likely be beneficial if a smaller basket were used, care being taken to make the plant firm in its position, and not to confine roots beneath the surface of the sphagnum which were formerly exposed to the air, nor to leave those roots which were previously confined fully exposed, as the result is that they will perish in either case, which greatly weakens the plant. When re-basketing, it is best to peg the aerial roots down to the moss, which they enter of their own accord when re-commencing to grow.

The same rule also applies to all other Orchids having aerial roots. Vanda cœrulea, for instance, sends forth a large number of such roots, and this is a suitable season to supply new sphagnum moss; but it is a great and fatal mistake to cut the plant down, and to suddenly confine these roots in a pot, in order to get rid of the long bare stem and be more pleasing to the eye. The plants will never survive such treatment. In dealing with Vandas, Saccolabiums, Aërides, Angræcums, and others of a like growth, due regard should be paid to Nature, and if the old stem is alive and has living roots at the base it should be left unmolested; and the better the cultivation the sooner will new growths appear from the base, which in course of time will re-clothe, or rather hide, the bare stems. I find that Vanda cœrulea succeeds best in a light and airy position in the Mexican house, during both winter and summer, shaded slightly from the fierce rays of the sun, and plentifully supplied with moisture from March to September, but during the remaining months kept somewhat dry.

The Mexican house is one where we grow principally Mexican Orchids, such as Lælia anceps, Gouldiana, autumnalis, and others; and it is kept at intermediate temperature at all times, except in sunny weather, and then scarcely any shading is used. The thermometer runs up to a high degree, but is always well tempered by the admission of large quantities of air and frequent dampings down. Of course it is best to set apart a house for Orchids delighting in such treatment, but where this is not convenient the same conditions may be secured by leaving exposed to the sun a part of the ordinary Cattleya or intermediate houses.

The potting of many Oncidiums and Odontoglossoms may also be proceeded with now. Odontoglossum grande, having been at rest, will now be showing signs of activity, and must be repotted if necessary and grown in an intermediate temperature. In fact, the proper time for repotting

Oncidiums and Odontoglossoms is directly the new growths commence to push from the base of the pseudobulbs, plants newly potted should be watered carefully for a few weeks, as the roots, having been disturbed, are liable to rot if kept too wet. Dendrobiums should be examined as they pass out of bloom, and all necessary work done to ensure healthy root action, afterwards placing them in a nice genial temperature, not too hot at first, so that the plants are able to recover from the weakening effect of flowering before being hurried into growth. D. Wardianum is a plant that suffers greatly from repotting. It should be grown in the best possible compost and in very small pots or baskets, so that frequent disturbances at the root is unnecessary, owing to the absence of a mass of decayed matter around them. In repotting Orchids of any kind the pots should be well crocked, filling them half or three parts full, according to their size, with clean crocks and charcoal, so that the water can pass away quickly.

Another point to keep in view is cleanliness. No Orchid can thrive if infested with any of the many parasites to which Orchids are subject, and which live upon the life sap of the plants. Our Phalænopses were once attacked by minute little insects, only just discernible to the naked eye, but having great powers for causing disfiguration of the new leaves. All kinds of insecticides were tried in their turn, but none seemed to have the desired effect until tobacco powder was resorted to, and this as the new leaf grew was kept well down in the axil, the result being that the plants were soon rid of the pest. What is worse in the Cattleya house than the fly which deposits its eggs most extraordinarily into the very centre of the young breaks, and the presence of which it is impossible to detect until the growth is about two inches high, when it becomes abnormally thick at the base, tapering rather sharply to a point, and does not grow kindly? On the removal of such growths a cavity is found in the centre, containing maggots in a more or less advanced stage of development. Not one of such growths should escape the vigilant eye of the cultivator, for it is difficult to say what mischief a nest is capable of doing the following season if allowed to come to maturity. Fortunately, by resorting to this one and only means, the removal of the infected growth, these pests are quickly exterminated, but when new additions are made to the collection it is well to be on the alert.

Dendrobiums have an equally dangerous foe in the form of a beetle, or shot-borer (Xyleborus perforans), nearly as large as an ant, which attacks the pseudobulbs both new and old. These should be cut away and burnt as soon as observed, or the damage may become serious. The presence of this depredator may be detected by neatly-bored holes, wherein the larva is deposited, causing the surrounding tissues to quickly decay. It has a decided preference for the D. Phalænopsis section, D. Dalhousianum, and D. formosum giganteum, but does not confine itself to these species.

Should this pest exist, a sharp look-out must be maintained until it is exterminated.

At this season it is also wise to look over all the plants, so that the early traces of thrips, red spider, and aphides may be discovered, thus preventing their increase; as this they quickly do if not held in check from the beginning. As a preventive, fumigation is advisable, but as a means of killing insects it is liable to cause injury, and therefore should not be attempted with that view. In these days there are many patent preparations for fumigation, all of which, like tobacco, may be good if used in moderation; but I would advise growers to take particular notice of the directions, using these patent chemicals under rather than over proof until well acquainted with the standard strength. The pure tobacco leaf is well known to be inimical to insect life, used in various ways. The continental grower takes advantage of the cheapness of this article, and places a quantity under the stages, not far from the hot-water pipes. This is continually getting damp, and in drying sends forth an odour which is agreeable to everything but insect life. I must also advise growers to be very careful in the use of liquid insecticides. My own opinion is that the less we use these the better for the plants, and if the grower had sufficient time or men to sponge with clear water only, so much the better would it be for the general good health of the plants. Great care should be taken with such plants as Stanhopeas, Catasetums, Houlletias, Chysis, and others with similar cup-shaped new growths, as these very quickly rot if insecticides are allowed to remain in them.

I conscientiously recommend a house set apart for the better showing off of Orchids when in bloom. Many persons object to the term "show house," and perhaps do so for good reasons. Instances have come to my notice where the mention of a show house has been misconstrued, and thought to mean a greenhouse or conservatory, where other flowering plants were placed, and to which the flowering Orchids have been taken straight away, with the result that many species have suffered greatly. It is not to such places that I refer as being suitable for showing off Orchids, but to a house having an intermediate temperature, such as where ferns are grown; the condition would then suit both the ferns and the flowers, being neither too dry nor too moist, and nicely shaded from the sun. I could point out no better place. No one who has not tried can imagine the lovely effect produced by the arrangement of flowering Orchids with Adiantum cuneatum, and other ferns, either by day or night. In fact, I think, when seen by the electric light, the colours of many species are even more charming than by daylight.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

SOBRALIA XANTHOLEUCA, Rchb. f. A handsome Guatemalan species with yellow flowers, rivalling those of S. macrantha. The plant is dwarfer in habit.—t. 7332.

GARDENERS' CHRONICLE.

LÆLIA × FINCKENIANA (See our last issue, p. 9, fig. 1).—December 30th, pp. 805, 806, fig. 123.

GARDENERS' MAGAZINE.

HEXISIA BIDENTATA. A rare and interesting little plant allied to Epidendrum, with fascicles of bright orange-scarlet flowers.—January 13th, p. 19, with fig.

WARSCEWICZELLA LINDENI. A handsome species with pure white flowers, recently introduced by Messrs. Linden, of Brussels.—January 13th, p. 19, with fig.

CYPRIPEDIUM × CLOTILDE MOENS. This beautiful hybrid was described at p. 284 of our last volume. It was raised by M. J. Moens, of Lede, from C. × Leeanum ♀ and C. Haynaldianum ♂, and received a First-class Certificate from the Royal Horticultural Society on September 12th last, when exhibited by Messrs. Linden.—January 20th, p. 34, with fig.

JOURNAL DES ORCHIDÉES.

LYCASTE × IMSCHOOTIANA, L. Lind. and Cogn. (See p. 8 of our last issue).—January 15th, pp. 328, 329, fig. 72.

JOURNAL OF HORTICULTURE.

CYPRIPEDIUM INSIGNE VAR. ILLUSTRE.—December 28th, p. 587, fig. 83.

ZYGOPETALUM ROSTRATUM.—January 4th, p. 7, fig. 1.

LÆLIO-CATTLEYA × NYSA (See p. 307 of our first volume).—January 11th, p. 31, fig. 5.

CYPRIPEDIUM × FAIRIEANO-LAWRENCEANUM (See p. 307 of our last volume).—January 10th, p. 45, fig. 7.

LINDENIA.

CYPRIPEDIUM CLAUDII, L. Lind. A handsome hybrid raised by M. J. Moens, of Lede, from C. Spicerianum ♀ and C. × vernixium ♂.—t. 397, fig. 1.

CYPRIPEDIUM × LATHAMIANUM, Rchb. f.—t. 397, fig. 2.

CYPRIPEDIUM × WEATHERSIANUM, L. Lind. A handsome hybrid raised by Messrs. Linden, Brussels, from C. × Leeanum superbum ♀ and C. hirsutissimum ♂.—t. 397, fig. 3.

MAXILLARIA STRIATA, Rolfe (See p. 265 of our last volume).—t. 398.

CATTLEYA ACLANDIÆ, Lindl., var. SALMONEA, Hort. A brightly coloured variety.—t. 399.

AGANISIA LEPIDA, Lind. and Rchb. f. This is a very charming plant, a native of Rio Negro, which was introduced to cultivation as long ago as 1865, but was soon lost sight of, and has only recently re-appeared. The flowers are white, with yellow crest, and the base of the column violet.—t. 400.

ORCHID ALBUM.

LÆLIA ANCEPS SCHRŒDERIANA.—t. 473.

ODONTOGLOSSUM PRIONOPETALUM, O'Brien. One of the forms of O. × Wilckeanum.—t. 474.

VANDA TERES ANDERSONI. A brightly coloured variety.—t. 475.

PLEUROTHALLIS ROEZLII, Rchb. f. A rare New Granadan species with racemes of largish purple-brown flowers.—t. 476.

ONCIDIUM SARCODES, Lindl.—t. 477.

PHAIUS × COOKSONI, Rolfe.—t. 478.

TRICHOPILIA HYMENANTHA, Rchb. f. A pretty little species now seldom seen in cultivation.—t. 479.

CATASETUM ATRATUM, Lindl. The male flowers of a very singular species. For description of the females, see Rolfe in *Gard. Chron.*, 1891, ii. p. 36, as the editors remark, "We cannot say what the other sex is like." —t. 480.

REICHENBACHIA.

Part 5 of volume ii. of the second series contains :—

ARACHNANTHE CLARKEI, Rolfe. A handsome species from Sikkim, growing at six thousand to eight thousand feet elevation.—p. 35, t. 65.

ZYGOPETALUM BURTII, Hemsl. A fine species from Costa Rica.—p. 37, t. 66.

CATTLEYA × PARTHENIA, Bleu. A handsome hybrid derived from C. × fimbriata ♀ and C. Mossiæ ♂, by M. Bleu, of Paris.—p. 39, t. 67.

PHALÆNOPSIS SANDERIANA, Rchb. f.—p. 41, t. 68, fig. 1.

PHALÆNOPSIS × INTERMEDIA VAR. PORTEI.—p. 43, t. 68, fig. 2.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

THE close of the year 1893 was characterised by a greater demand than ever for cut flowers of Orchids, which evidently proves that these charming and curious flowers are becoming more popular every day.

Many interesting and unpublished hybrids have flowered in the establishment of one of our principal cultivators, M. Ch. Vuylsteke, of Loochristy. Cypripedium × Jupiter, derived from C. Boxalii atratum ♀ × and C. hirsutissimum ♂, has the dorsal sepal very dark, with a light green apex, and the ciliated margin white, the petals strongly undulated, yellowish green in their

basal portion, the remainder purple, and the lip most resembling that of the seed parent. The peduncle has also the long hairs of this species. C. × Eurydice is one of the most beautiful hybrids raised in recent years. Its parents are C. × Leeanum superbum ♀ and C. hirsutissimum ♂. Its growth is robust; the dorsal sepal is most like that of the mother, but more beautiful, and the rest of the flower about intermediate in form and colour. C. × Zampa and C. × Erato are two other beautiful hybrids now in flower, which were described at page 118 of your last volume. M. Vuylsteke has also two beautiful Odontoglossums, introduced from Columbia, which appear to be natural hybrids, one is much like O. × Wilckeanum, and has a perfume of hyacinths, the other is dark and smells like Cœlogyne cristata.

The January meeting at Ghent had to be abandoned on account of the cold, but that of the Orchidéene of Brussels was one of the most brilliant yet held by that Society. Eleven First-class Diplomas of Honour were awarded, as follows:—To Maxillaria Lindeniæ, Cypripedium × Madouxianum, Epidendrum Wallisii var., and Cattleya hybrid unnamed (Mossiæ × Percivaliana), from Messrs. Linden; Cattleya amethystoglossa var. Treyerani, and Cattleya hybrid unnamed (gigas × Trianæ), from M. Treyeran: Cypripedium × Denisianum, from M. Madoux; C. hybrid unnamed, from M. G. Warocqué; C. × Paulii, from M. G. Miteau; Odontoglossum sp., from M. Dallemagne; and O. Wambekeanum, from M. Van Wambeke. Other exhibits were numerous and many of them extremely good.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

OWING, no doubt, to the unseasonably mild weather, there was a splendid display of Orchids at the Royal Horticultural Society's meeting at the Drill Hall, James Street, Westminster, on January 16th.

A Silver Banksian Medal was awarded to the President, Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), for a group of rare plants. An Award of Merit was given to Dendrobium × Hebe (D. Findlayanum ♀ × D. × Ainsworthii ♂), a white-blush variety with a pale primrose lip, and derived from the same parents as the totally distinct D. × Dido—a form with rose-purple segments and a deep maroon blotch in the white rose-tipped lip. A Botanical Certificate was awarded to the deep brown-red Mormodes Rolfeanum, and also to Epidendrum polybulbon, a species with brown and yellow segments and a white lip. Fine specimens of Cœlogyne graminifolia and Cypripedium × Calypso, Oakwood variety, were also shown.

W. M. Appleton, Esq., F.R.H.S., Tyn-y-Coed, Weston-super-Mare, exhibited Cypripedium Bullenianum Appletonianum, and flowers of Lælia albida and its variety sulphurea; as well as two distinct forms of Cattleya Walkeriana.

F. A. Bevan, Esq., F.R.H.S. (gr. Mr. W. H. Lees), Trent Park, Barnet, sent the Trent Park variety of Dendrobium Phalænopsis, a white form with violet marks on the lip.

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray), exhibited Calanthe × William Murray (C. vestita rubro-oculata ♀ × C. × Williamsii ♂), with white segments and a dark crimson lip; and C. × Bryan (raised from the same parents), having creamy white flowers with a purple eye. An Award of Merit was granted to each plant.

De Barri Crawshay, Esq., F.R.H.S., Rosefield, Sevenoaks (gr. Mr. S. Cooke), exhibited Lælia × Crawshayana, and some varieties of Odontoglossum × Ruckerianum and O. × Andersonianum.

A Bronze Banksian Medal was awarded to Mr. J. Crispin, F.R.H.S., Fishponds, Bristol, for a fine collection of thirty varieties of Cypripedium.

W. H. Evans, Esq., Ford Abbey, Chard, Somerset (gr. Mr. J. Crook), sent a few spikes of Lælia anceps.

C. W. Fincken, Esq., F.R.H.S., Hoyland Hall, Barnsley (gr. Mr. Milburn), contributed varieties of Odontoglossum Rossii majus and Lælia anceps Schrœderiana.

An Award of Merit was given to Calanthe × Florence (C. × bella ♀ × C. × Veitchii ♂) shown by Mr. J. H. Fitt, F.R.H.S., The Frythe Gardens, Welwyn, the flowers being mottled with purple and white, and having a deep purple eye.

G. H. Goulten, Esq., Somerset Villa, Camley Park Road, exhibited a strong plant of Cypripedium × Goultenianum (C. Curtisii ♀ × C. callosum ♂), which had the lip of C. Curtisi and the sepals and petals of C. callosum.

Mr. W. Head, F.R.H.S., Crystal Palace, exhibited Cattleya Trianæ albens, which has almost pure white flowers.

A. J. Hollington, Esq., F.R.H.S., Forty Hill, Enfield (gr. Mr. Ayling), exhibited several new hybrid Cypripediums.

W. R. Lee, Esq., F.R.H.S., Beech Lawn, Audenshaw, Manchester, sent a specimen of Cypripedium × Leo.

A distinct form of Cypripedium insigne and flowers of the Southgate variety of Cattleya Percivaliana came from Messrs. Lewis and Co., Chase Side, Southgate.

Long after the Orchid Committee had dispersed, came a consignment of plants from the Parc Leopold, Brussels, sent by Messrs. Linden. The large, white-flowered Maxillaria Lindeniæ, with a bright yellow lip, may perhaps be best described by saying that it is M. venusta greatly enlarged. Zygopetalum Clæsianum having deep green segments blotched with blackish

purple and a white lip veined with deep violet; two splendid specimens of the rare and soft pellucid yellow Stenia fimbriata with a fluffy silken lip; and a charming variety of Odontoglossum × deltoglossum and O. crispum.

A Silver Banksian Medal was awarded to Messrs. H. Low and Co., Clapton, for a group in which Saccolabium bellinum and its variety album, Angræcum caudatum, several Cypripediums and Miltonia Roezli were conspicuous.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), obtained a Silver Flora Medal for a collection in which were many fine Cypripediums, including the charming pale yellow C. insigne Ernesti, C. × Leeanum illustre, C. × Buchanianum (C. Druryi ♀ × C. Spicerianum ♂); also the remarkable Masdevallia cupularis, and Pleurothallis punctulata.

F. W. Moore, Esq., F.R.H.S., Botanic Gardens, Glasnevin, Dublin, exhibited splendid spikes of Cyperorchis elegans and Bulbophyllum comosum.

Flowers of Dendrobium nobile came from Mr. J. T. Richardson, F.R.H.S., Grindon Hall Gardens, Sunderland.

A Silver Gilt Flora Medal was awarded to Messrs. F. Sander and Co., St. Albans, for a large collection, consisting chiefly of numerous white varieties of Lælia anceps. A First-class Certificate was given to L. a. Ashworthiana, a large, distinct, and charming form, pure white, with pale violet (not rose-purple) lines on the side lobes of the expansive lip, the front lobe of which has a few violet marks and a deeper blotch on each side of the bright yellow crest. An Award of Merit went to Phaio-calanthe × Arnoldiæ (Calanthe Regnieri ♀ × Phaius grandifolius ♂), a hybrid with pinky-buff flowers.

A fine spike of Odontoglossum ramosissimum was shown by A. H. Smee, Esq., F.R.H.S., The Grange, Wallington (gr. Mr. Cummins).

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited Lælia × Euterpe and several hybrid Cypripediums, among the latter being a superb form of C. × Edwardii with flowers deeply suffused with rose.

W. Thompson, Esq., F.R.H.S., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), exhibited Stevens's variety of Odontoglossum Rossii, several O. × Andersonianum, and the Walton Grange variety of Lælia anceps, a lovely white form with a tinge of yellow in the lip, and showing an entire absence of lines on the side lobes.

Messrs. James Veitch and Sons, Chelsea, exhibited Dendrobium × euosmum, and its variety roseum; Sophro-cattleya × Veitchii; Epidendrum × Endresio-Wallisii; Cypripedium × Niobe; and C. × Morganiæ langleyense (C. superbiens ♀ × C. Stonei platytænium ♂). The latter

received a First-class Certificate, and seems to be identical with a good form of C. × Morganiæ.

F. Wigan, Esq., F.R.H.S., Clare Lawn, East Sheen (gr. Mr. W. H. Young), exhibited the rare and very distinct Dendrobium atroviolaceum, which received a First-class Certificate. It has greenish yellow flowers with a deep violet lip.

A Silver Banksian Medal was given to Messrs. B. S. Williams and Son, Upper Holloway, for a group containing several distinct Cypripediums, Oncidium Forbesii, Dendrobium Wardianum, etc.

CORRESPONDENCE, &c.

W. M. APPLETON, Esq., Tyn-y-Coed, Weston-super-Mare, sends a very curious flower of Lælia furfuracea, in which the dorsal sepal is absent, its place being occupied by (apparently) a single petal—for it distinctly arises from the interior whorl. The lateral sepals and lip are normal, but the column is a little flattened. There are only four segments to the flower. Four growths each bear a single flower, and all are alike, which is rather curious, and suggests that the peculiarity has become fixed. The keels have the characteristic white mealiness of this species. Two distinct varieties of Cattleya Walkeriana are also enclosed, one much darker in colour than the other, and with a broader lip.

Reginald Young, Esq., Sefton Park, Liverpool, sends a photograph of a splendid specimen of Lycaste Skinneri alba, the latter showing twenty-four buds and flowers. A flower enclosed is five inches in diameter and the sepals 1⅝ inches broad. The plant was purchased in November, 1889, when bearing seventeen flowers, and has since borne one hundred and nine others. Mr. Young remarks that it is a constant source of pleasure. Lælia anceps Williamsii and L. a. Sanderiana are also very fine, the latter bearing five flowers on the spike. Maxillaria grandiflora, Lycaste Youngii, Cypripedium × Williamsii, and Odontoglossom × Humeanum, also afford evidence of good culture. The other Cypripedium is perhaps nearer C. × discolor than C. × meirax, but both are believed to have the same parentage.

A flower of Lælia × Crawshayana, from one of the type plants, comes from De Barri Crawshay, Esq., Rosefield, Sevenoaks. The spike bore four flowers. Two other plants bear spikes of three each. Odontoglossum × Ruckerianum, Crawshay's var. is a bright and prettily coloured form. O. × Andersonianum lobatum is peculiar in the development of the side lobes. The one with yellow ground is apparently a form of O. × baphicanthum with a few spots.

Cypripedium callosum var. Rossianum, sent by H. J. Ross, Esq., of Florence, is a very fine form, with long rather narrow and very falcate petals, which bear two or three spots in the centre as well as on the outer edge. A fine form of Odontoglossum crispum has eleven flowers on the spike, the segments broad and of the purest white, and a few very light cinnamon spots on the front of the lip. Selenipedium Klotzschianum is correct. Lælia anceps Sanderiana, one form unusually small. Many thanks for painting.

T. Rawlings, Birches Green. The Cattleya Trianæ bogotensis is a good light-coloured form.

E. O. Orpett, Mass. Oncidium excavatum and O. aurosum are considered to be forms of one species, but O. rupestre is quite distinct.

F. B. Walmsley, Mossley Hill. 1 and 2, Lælia anceps Sanderiana ; 3, L. a. Williamsii ; Odontoglossum ramosissimum ; Cypripedium × Ceres—C. × fascinator may be considered a fine variety of the same ; Lælia anceps typical, a fine dark form.

O. O. W., Bury. Photograph of Cypripedium Godefroyæ leucochilum received, with thanks.

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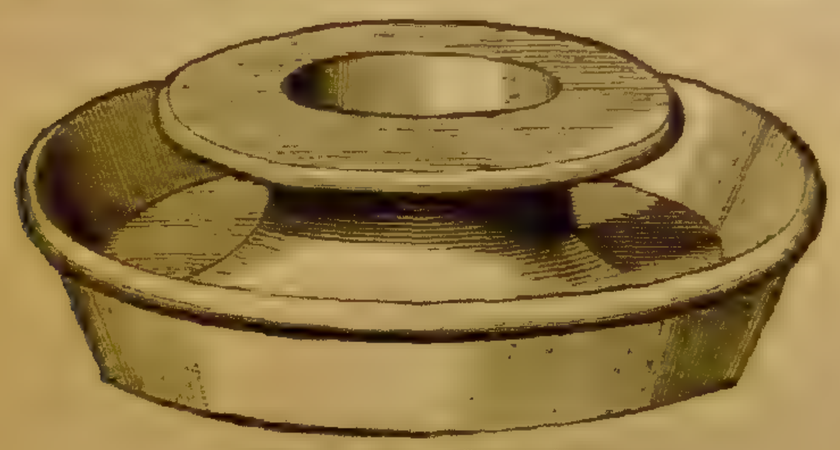

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THE ORCHID REVIEW.

VOL. II.] *MARCH*, 1894. [NO. 15.

NOTES.

AT the last meeting of the Royal Horticultural Society, held on February 13th, there was a magnificent display of Orchids, sent from about thirty collections throughout the kingdom. Six groups and over fifty subjects were entered for the consideration of the Orchid Committee. A report appears on another page.

Two meetings of the Society will be held during March, on the 13th and 27th, respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

The Williams' Memorial Fund trustees have decided to offer a Williams' Memorial Medal for the best group of Cypripediums exhibited at the Temple Show of the Royal Horticultural Society, to be held on May 23rd, 24th, and 25th next. These plants are becoming so numerous, and are, moreover, extremely popular, so that an interesting exhibition of the summer flowering kinds and a spirited competition may be anticipated.

A fine plant of the remarkable Cycnoches Loddigesii, the original species of the genus, is now flowering at Kew, one raceme bearing four fine male flowers, while a second one is pushing, which will flower somewhat later. It is to be hoped that the females, formerly known as C. cucullatum, may appear now that the species is again in cultivation. The very interesting history of the species is given on p. 165 of our last volume.

Speaking of structural alterations at Kew, the February number of the *Kew Bulletin* states that the Masdevallia Pit has been reconstructed, and is now span-roofed, and on a level with the adjoining range of private Orchid Pits, which is certainly a great improvement.

Cypripedium spectabile is noted by Mr. Nicholson, in the *Kew Bulletin* for February, as one of the features of interest in the garden of Mr. H. H. Hunnewell, of Wellesley, Mass. It thrives exceedingly in the bog garden, and a large mass of it has produced a considerable number of double-flowered stems.

The good old Phaius grandifolius—a plant which has enjoyed over a century of uninterrupted existence in European gardens—is grown with the greatest success in the collection of T. W. Swinburne, Esq., Corndean Hall, Winchcombe, Cheltenham. Some of the many spikes are five feet high, and have remarkably fine flowers. One of them is curiously abnormal, and consists of only four segments. As far as can be made out, the dorsal sepal is absent, and a fragment of the lip is united with one of the petals. The column is imperfect, and the spur nearly suppressed.

Mr. Swinburne has also over half a dozen plants of a hybrid between Cypripedium Lawrenceanum ♀ and Selenipedium × Sedeni ♂, which he hopes to flower soon. This is interesting, as many people have tried to cross the two genera together, without success. Messrs. Veitch, however, have a hybrid between C. barbatum and S. caudatum which ought to have flowered long ago, but it steadily refuses to do so.

At the Great Horticultural Exhibition to be held at Antwerp on May 13th, 14th, and 15th next, in connection with the Exposition Universelle, Orchids will occupy a prominent place, and, among other prizes, twelve gold medals are offered, of the value of three hundred, two hundred, and one hundred francs.

At the International Exhibitions to be held at Tourcoing on May 19th, and at Lille on June 3rd, Orchids will also occupy a prominent place.

The February number of *Scribner's Magazine* contains an article entitled "Orchids," by Mr. W. A. Styles, Editor of *Garden and Forest*.

OBITUARY.

We regret to learn of the death of Mr. Frederick George Tautz, of Dibdin House, Ealing, which took place on February 1st last, in his 49th year. The deceased gentleman was an enthusiastic Orchidist, and paid special attention to Cypripediums, the collection which he formed at Studley House, Hammersmith, which was dispersed a few years ago, being then one of the best in existence. In his new home he had again got together a considerable collection, including a large number of seedlings which have not yet flowered. His name is commemorated in Cypripedium × Tautzianum, the beautiful hybrid raised by Messrs. Veitch from C. niveum and C. barbatum.

DIES ORCHIDIANÆ.

We Britishers are excellent growers of Orchids, as is well known. Our splendid specimens and admirable show of bloom afford sufficient proof of this. Yet our houses are badly lighted, and insufficiently ventilated. Our ventilators are too few, too small, and are hardly ever opened. Sometimes they are covered with perforated zinc, through which hardly any air passes, and sometimes too little top air is afforded. Our temperatures—at least for Odontoglossums and Masdevallias—are excessive. We usually keep our plants too dry—in fact, we trust entirely to the resting season to ripen our plants, and attach so much importance to it that we keep our Orchids extremely dry even during their growth. Almost everywhere we cover our stages with a thick layer of coke or charcoal, which does not allow the air to circulate between the pots. And what is the result? There is not seen that vigorous growth which is shown in plants grown according to the Belgian methods. Our Orchids are less green, have fewer roots, and much more slender floral stems. The Belgians water much more, give a less long repose, and especially they give more air, and are most attentive observers of the thousand little matters of detail which are of such great importance.

I rub my eyes in astonishment, and wonder—can I have been dreaming? No! there it is in black and white, a rather tremendous indictment of the English Orchid-grower and his methods, by his Belgian compeer. But are our houses so badly lighted and ventilated? And have the Belgians a monopoly of open stages, and of the knowledge that light and air are necessary for the successful cultivation of these plants? It would be strange indeed if, after preaching these truths for so many years, we should cease to practise them. But the proof of the pudding is in the eating, and I do not hesitate to say that I have seen Odontoglossums cultivated in England with pseudobulbs larger than the imported ones, with foliage of the richest green, and with flowers of a size and substance which some of our Belgian friends would like to beat, while the size of the inflorescence left nothing to be desired. There are English collections in which Odontoglossums are not well grown, just as there are Belgian ones. On the other hand, I have seen exceptionally well-grown ones from both countries, and I have yet to see Belgian specimens superior to those of our best English collections.

The Belgians, it is true, have one important advantage over us in the matter of cheap tobacco. Thrips are a terrible pest to many Orchids, and Odontoglossums form no exception to the rule, while it is doubtful whether any antidote has been discovered of equal value to tobacco. In England, however, it becomes an expensive article, as the refuse which the Belgians

utilise so largely cannot be had, and some of the substitutes are either less efficient or sold at an almost prohibitive price. Fogs, again, do not trouble the Belgian cultivator, or at all events not those highly charged with smoke and deleterious gases, as in the neighbourhood of London and some of our large towns. If our Belgian friends can beat us, by all means let us know why, but let them first send us the proofs.

Last month I alluded to Cœlogyne cristata and its varieties. They are now literally one blaze of colour—if the term may be applied to an Orchid of such spotless purity. Surely this must be one of the very best of all cultivated Orchids, not even surpassed by Odontoglossum crispum and Dendrobium nobile, if the ease with which it can be cultivated be taken into consideration. Two of its varieties stand out clear and distinct, namely, alba and Lemoniana, though one or two others also possess certain distinguishing characters. I have been rather curious to learn the origin of these two fine forms. The first-named is an albino—perhaps the purest white Orchid known—and was described by Reichenbach in 1881 as variety hololeuca. But it had then been known under the name of alba for at least two years, and how much longer I am unable to say, for it is recorded in 1879 by Mr. J. D. Richards that two large plants of it were in flower at Oakley House, Gledhow, Leeds, and that it bloomed later than the ordinary form under the same treatment. This was certainly not its first appearance. Perhaps some of your readers can throw further light on the point. Lemoniana is stated to have appeared in the collection of the late Sir Charles Lemon, many years ago—certainly long before 1881, when two or three records appeared. It was named after Sir Charles Lemon. It has also been called variety citrina, though which is the older name I am not sure. This recalls to my mind an amusing incident about it. Mr. Ridley, in a paper read at the Orchid Conference at Liverpool, remarked that the name Lemoniana was unobjectionable, "though the error made by its original namer, in imagining that Lemoniana meant lemon-coloured, may call up a laugh at his expense." I cannot repress a smile, but it is not at the expense of the original namer.

I observe in the *Gardeners' Chronicle* for February 17th, an appreciative article on Cypripediums at Stand Hall, over the signature of "A." It is undoubtedly true that these plants are coming to the front, and that the want of colour and variety about many of the exotic species is rapidly being obviated by cross-breeding and hybridisation, which has given an immense impetus to the formation of collections in general. But I am afraid that the writer does not read his *Orchid Review* very carefully. He makes Cypripedium Spicerianum one of the parents of C. × Edwardii,

instead of the rare C. Fairieanum. C. × Desboisianum is spoken of as one of the Veitchian hybrids, whereas it was raised by Messrs. Vervaet. The cross between C. niveum and ciliolare is called C. × Halaighi, which presumably does duty for C × Aylingii, its proper name. C. Sanderianum is also mentioned, but from the context it is certain that that species is not intended, but C. insigne Sanderianum. The writer, however, is correct about C. × Lucienianum, which evidently had C. insigne for one of its parents, and not C. bellatulum or C. × œnanthum superbum, as originally described. When I saw the hybrid I immediately recognised it as a variety of C. × nitens. Alas! that the crop of errors should be so prolific.

Dendrobium nobile and its numerous varieties, together with the hybrids derived from it, are now flowering in great profusion all round, and I am much struck with the great amount of variation they present. Even of D. nobile itself we now have a large number of distinct varieties, as nobilius, still the premier form, cœrulescens, Schoederianum, elegans, Sanderianum, the charming Ballianum, in which the maroon of the disc is absent, the beautiful albiflorum and the very similar Amesiæ, to say nothing of the curious sports, Tollianum and Cooksonianum. And others have received distinctive names—in fact, so many exist as to become rather bewildering. And the hybrids, their name is legion. First come the beautiful aureum crosses, D. × Ainsworthii and its variety roseum, D. × Leechianum, and D. × splendidissimum; then those with Falconeri and japonicum, D. × Venus and D. × Cassiope, respectively; also D. × Dominianum, from Linawianum, and D. × euosmum, in which the hybrid D. × endocharis played a part. Truly we have a wealth of beauty in these charming plants.

Cypripedium Charlesworthii has appeared in force, and an extensive flowering may be anticipated next autumn. Besides the original importation of Messrs. Charlesworth, Shuttleworth and Co. we have a small one distributed by Messrs. Lewis, and now Messrs. Hugh Low and Co. have received a lot, and the other day offered five hundred healthy plants for sale. Its value as a decorative plant will soon be put to the test, for the numerous plants which I have seen are doing well, and will doubtless flower freely when their proper season comes round. It will be interesting to observe its range of variation and see if distinct varieties appear. The mysterious C. Fairieanum, however, still eludes our collectors. Why do not the hybridists take it in hand and raise it true from seed?

ARGUS.

NEUWIEDIA LINDLEYI.

PROBABLY very few Orchid growers are acquainted with the remarkable Malayan genus Neuwiedia. Indeed, it is doubtful whether any of the species were introduced to Europe until two or three years ago. Now, however, one of them has flowered at Kew. The floral organs of most Orchids are so profoundly modified that all resemblance to those of an ordinary monocotyledon seems to be lost; but those of the present genus form a most instructive exception. Here we find three nearly free stamens, with linear anthers, and a slender style—characters which at first sight seem incompatible with those of an ordinary Orchid. The plants have the habit of Curculigo and bear erect spikes of yellow flowers, not unlike those of Calanthe curculigoides, but longer, narrower, and without a spur. The ovary is precisely that of an Orchid—or, at least, that of Selenipedium, being three-celled with axile placentation—and the seeds are also similar, both in structure and appearance. And as to the other peculiarities, appearances are rather deceptive. Closer examination reveals the fact that the stamens and style are united into a short column at the base, and also that the three stamens are those present in Cypripedium, though the dorsal one is not modified into a staminode, as in that genus. In both the three stamens are situated on the back of the flower, while the three on the front are suppressed, which is an interesting peculiarity. An ordinary monocotyledonous flower has six stamens, arranged in two alternating whorls of three each, one within the other. Occasionally either the outer or inner whorl is absent, but in the present instance the suppressed stamens are two of the outer whorl and one of the inner, which accounts for the remaining three being all on one side of the flower. The present genus, together with Apostasia, were formerly considered as representing a distinct family, the Apostasieæ, and there are those who would still keep them apart.

The fact is Apostasieæ are ancestral Orchids—plants which have retained much of their simple monocotyledonous structure, while many of their brethren have become profoundly modified—and a brief examination of their characters affords a wonderful insight into the mysteries of the family generally, for all, however highly specialised, are simply modifications of the same type.

The one character in which Orchids differ most from ordinary monocotyledons, and to which no exception can be taken, is in the structure of the seeds—the minute homogeneous embryo with wrinkled testa—but this they possess in common with Burmanniaceæ. The latter Order, however, has regular flowers, in which both whorls of stamens may be present or the outer or inner one entirely suppressed. Orchids are invariably irregular in structure—at least in the arrangement of the stamens—and

here again is an absolute difference. The first subdivision of the Orchideæ is into those with two or more stamens—the Diandræ—and those with only one—the Monandræ—the former with simple pollen grains, the latter having them united in fours, or still further aggregated in masses. The Diandræ are further divisible into two marked tribes, Apostasieæ and Cypripedieæ, whose differences may be briefly defined. In Apostasieæ the perianth is regular or nearly so, the column very short, the anthers elongated, the pollen dry, and the style very slender; while in Cypripedieæ the perianth is highly irregular by the modification of one petal into a pouch, the column more developed, the anthers globose, and the pollen grains agglutinated together by a viscid exudation. There are other characters, but all are liable to exception. For example, Apostasieæ have a three-celled ovary with axile placentation, but so has Selenipedium, while the dorsal stamen may be modified into a staminode in Apostasieæ, though it is never shield-shaped, as in Cypripedieæ.

In Apostasieæ we find three distinct types of structure, which evidently represent the same number of genera. In the first the three stamens are all perfect, and this characterises Neuwiedia, a genus of six known species. In the second type the dorsal stamen is modified into a subulate staminode, and the anthers are linear-oblong with unequal bases, but in the third the dorsal stamen is entirely suppressed, and the anthers are equal and cordate at the base. The second type is that of the genus Apostasia, as originally described, and the third was called Apostasia section Adactylus, in order to distinguish it from the original. But it is evidently a good genus, which may bear the latter name. Apostasia, as thus limited, comprises four species, three Indo Malayan and one tropical Australian, while Adactylus has three, A. nudus, A. Lobbii, and A. latifolius (which formerly bore these respective names under Apostasia), all of them Indo-Malayan.

In the Cypripedieæ we find simply a higher development of the same structural type, and one of the two genera—Selenipedium—has retained the ovarian character of the more ancestral Apostasieæ. To separate Apostasieæ as a distinct Order, while at the same time including Cypripedieæ among Orchids, is simply to ignore the facts. The gap which separates Monandræ from Diandræ is far wider, but, taking all things into consideration, I should consider the two as distinct suborders only.

In the Monandræ the aggregation and displacement of parts has been carried much further, and the dorsal stamen of the outer whorl—the staminode of Cypripedieæ—is alone perfect, though others are potentially present as wings of the column and other staminodial appendages. In addition to the compound pollen-grains, it is in this suborder alone that one of the three pistils becomes modified into the rostellum, while the two remaining ones are represented by the stigma. This highly specialised group has grown and multiplied exceedingly, and comprises the four great

tribes, Neottieæ, Ophrydeæ, Epidendreæ, and Vandeæ, and numerous sub-tribes—in fact, the great bulk of the Order.

This is rather a digression from our original starting point, but so many people take an intelligent interest in the structure and economy of this remarkable family that no further apology may be offered. Further particulars may be found in my Review of the Apostasieæ published in the twenty-fifth volume of the *Journal of the Linnean Society*.

Neuwiedia Lindleyi is a native of Borneo and the Island of Penang.

Neuwiedia Lindleyi, Rolfe in *Journ. Linn. Soc.*, xxv. p. 232, t. 48, figs. 10–12.

R. A. ROLFE.

DENDROBIUM ATROVIOLACEUM.

This is a very beautiful species from New Guinea, which was introduced by Messrs. James Veitch and Sons, of Chelsea, about four years. It is allied to D. macrophyllum, A. Rich., though readily distinguished by the absence of the green moss-like covering to the ovary, and the much brighter and more handsome flowers. The sepals and petals are pale primrose-yellow, spotted with dusky brown, and the lip very deep violet-purple with a few green markings. Fortunately it has proved amenable to cultivation, and a healthy plant was exhibited by F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), at the meeting of the Royal Horticultural Society on January 16th last, when it received a First-class Certificate. One growth carried a raceme of eight flowers, while a second one had four buds not yet expanded. It is a very handsome species.

Dendrobium atroviolaceum, Rolfe in *Gard. Chron.*, 1890, i. p. 512.

CHYSIS BRUENNOWIANA.

At the Royal Horticultural Society's meeting held on December 12th last, a very distinct Chysis was exhibited by Messrs. F. Sander and Co., of St. Albans, under the provisional name of C. Oweniana. It has, however, proved to be C. Bruennowiana, a species described in 1857 from dried species collected by Warscewicz, in Peru, whence also Messrs. Sander's plants were obtained. It would appear to have been in cultivation before, for Reichenbach spoke of it as likely soon to flower in the collection of Herr Brünnow, of Berlin, but it was probably soon afterwards lost. It has the general habit of the genus, but the flowers are borne several together in a raceme, and are prettily suffused with pink on a light-yellow ground. It forms an interesting addition to the genus.

Chysis Bruennowiana, Rchb. f. and Warscew. in *Bot. Zeit.*, xv. p. 157.

R. A. R.

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A second part is in course of active preparation.

From THE GARDENERS' CHRONICLE, Sept. 30, 1893.

FOLLOWING his *Orchids of the Cape Peninsula*, which proved such a boon to the botanist and student of the flora of South Africa, and especially to the cultivator of Cape terrestrial Orchids, which now find favour in gardens, Mr. Harry Bolus, F.L.S., in his *Figures, with Descriptions of Extra-Tropical South African Orchids*, gives to the world a valuable work, the outcome of years of study and research, and one which has evidently been made a labour of love.

The plan of the work, of which this is the first issue, is that each of the species should be thor-

(For Orchid Literature, see page 5).

oughly dealt with, and coloured and analytical drawings given, a method which, as the author in the preface states, is the only satisfactory one with the majority of the subjects described. But, notwithstanding the presence of the illustrations, the descriptions in the letterpress, both in Latin and English, are given even to the most minute details, and the affinities and habitats of the species, and other interesting information, are appended.

Fifty coloured or partly coloured (except four) plates are given, and they are remarkable for the careful drawing and depicting of what some might regard as minor features, but which are of the highest importance in giving a faithful representation of the plant. The colouring, too, is good, and not exaggerated. The subjects illustrated and described comprise Disa, 13 species : Satyrium, 6 ; Habenaria, 3 ; Bulbophyllum, 1 ; Angræcum, 5 ; Corycium, 3 ; Brownleea, 4 ; Disperis, 1 ; Eulophia, 2 ; Holothrix, 3 ; Liparis, 2 ; Pachites, 1 ; Platylepis, 1 ; Pogonia, 1 ; Pterygodium, 3 ; and Schizochilus, 1. Of these nine are new species, viz., Angræcum caffrum, A. Mandæ, Habenaria Galpini, Satyrium Guthriei, S. ocellatum, Pachites Bodkini, Disa sabulosa, D. conferta, and Brownleea Galpini. Turning to the figures of the plants, we observe that some of the plants illustrated are in cultivation, although probably owing to our want of a proper knowledge of them—a want which it is one of the provinces of the present work to supply—it may be said of some of them, as it has been said of the members of the genus homo, "They are here to-day and gone to-morrow." Liparis Bowkeri, t. 2, and Bulbophyllum Sandersoni, t. 3, we have seen in flower lately ; so also Angræcum sacciferum, t. 10, Habenaria Dregeana, t. 15, H. tetrapetala, t. 16, Satyrium maculatum, t. 19, and Disa tripetaloides, of which a new yellow form is illustrated at t. 30. Disa sagittalis has also flowered in gardens frequently of late, and has far more beauty than the illustration conveys ; t. 37 gives a fine picture of the blue Disa, D. graminifolia, about which Mr. Bolus gives some particulars of its habitat, in the hope of its being able to assist in the cultivation of this desirable plant. Most of the grassy-leaved Disas have proved unsatisfactory under cultivation, as they merely grow, but very rarely flower. D. lacera (figured in the *Orchid album* as D. graminifolia) has been the freest to bloom, and during one season we heard of its having bloomed in several gardens. Plate 38 illustrates the orange-scarlet Disa ferruginea, and t. 39 the similarly-coloured, but totaly different in structure, D. porrecta, a very useful arrangement for comparison, as the names are confused in gardens. On t. 35, Disa elegans, Rchb. f., an illustration of a beetle found on it is given, with the following interesting remarks :—"Upon one of the flowers was found a beetle, Peritrichia sp., as my friend Mr. Peringuey, informs me, belonging to group of well-known fertilisers, and which had a pollinium attached to its thorax. This being only the second instance of an insect actually carrying Orchid pollen which I have seen during many years' study of Cape Orchids, I have thought it desirable to figure it with the plant."

The work is of great value to the botanist, and should be of great interest to gardeners, the plants which are treated of being those that are finding gradually the place in gardens that they deserve to occupy, and affording ample returns for the care bestowed upon them. For example, Disa racemosa and D. tripetaloides are now found to be very easily cultivated, and they have produced home-raised hybrids of fine quality—take, for instance, Disa × Veitchii and D. × kewensis—and doubtless the day is not far distant when other handsome species of the genus will be equally at home with us. The Satyriums, too, thrive remarkably well in cool sunny frames with some cultivators ; but those who make greenhouse plants of them have but little success. For whatever purpose, however, the work under notice is obtained, we are sure that all who get this first part will eagerly look forward for its successors, which we sincerely trust its talented author will have leisure to elaborate.

From JOURNAL OF BOTANY, November, 1893.

THESE fifty excellent plates and descriptions illustrating the Cape Flora are indeed welcome. The species selected range through the whole order from *Liparis* to *Disa* and *Pterygodium*, and we presume the same arrangement will obtain in subsequent parts. Why does not Mr. Bolus monograph the order in order, a task for which he is eminently qualified, and by which he would confer a still greater boon on botanists throughout the world, as well as on those field-botanists, students, and lovers of nature in South Africa to whom he trusts his book will be of service? Scattered "Icones" are of course all very well where nothing better is to be had, but Mr. Bolus must have ready to hand, or could at any rate procure with comparative ease, the materials for this part of a much-needed "Flora." There is a tradition which the younger botanists have received from their fathers of a continuation of the *Flora Capensis*, of which, so the story runs, portions have been elaborated by various workers ; but, alas ! like other great works, it remains, and seems likely to remain, incomplete.

The chief value of the present work consists in the fact that nearly all the drawings are from living specimens. One envies the fortunate workers who can get fresh plants for their dissections ; certainly, as the author remarks in the first lines of his Preface, few orders stand more in need of such illustration than Orchids. It is always a tedious, often a highly unsatisfactory or almost hopeless, task to resurrect flowers so complex in detail from a soppy mess. The author, who is also the

artist, has done his work admirably ; in each case is given, where possible, a sketch of the plant as a whole, while the flower and its parts are very fully illustrated. In few, but rare, cases the dissections are so numerous as to somewhat unduly crowd the plate. The style adopted is that of the *Refugium Botanicum*, parts only of the drawing being tinted, but quite enough to give an idea of the colour of stem, leaf, flower, lip, or column. This must be cheaper than a coloured plate, and is, we think, otherwise preferable.

Several new species are described ; two small Angræcums, a *Habenaria*, two each of *Satyrium* and *Disa* ; while that interesting little genus *Pachites*, which unites the characters of the two last, hitherto monotypic, receives an addition in *P. Bodkini*, a solitary specimen of which was found by Prof. Bodkin on the Muizenberg, Cape Peninsula, early in 1890. Further search in the same and succeeding seasons has proved fruitless ; a somewhat remarkable coincidence, as Mr. Bolus points out, Burchell having originally found only one specimen of the first species, *P. appressa*. Kraus found the latter again twenty-four years after Burchell, but, so far as known, it had not been discovered since till quite recently, when Mr. Schlechter, a German botanist and collector who is making an extensive tour through South Africa, came across a couple of plants. *Apropos* of the plate *Pachites Bodkini* (Tab. 26), we note that the indicating figures 3 and 4 have become transposed, so that the lip is described as "one of the petals," and *vice versâ*. This is the only mistake of the kind we have noticed in looking through the book. *Brownlea*, another genus of the *Disa* affinity, but differing in the adhesion of the lateral petals to the odd sepal, and the form of the insignificant lip, is enriched by the description of a new species and its variety, *major*. *Disa* itself supplies a larger proportion of Icones than any other genus, tabs. 27-39 being devoted to it, while the subtribe *Diseæ* is very predominant.

We can enlighten Mr. Bolus on one point. He says of *Pogonia purpurata* (t. 12), "the original description was based upon a plant in Sonder's herbarium supposed to have been found in the Magaliesbergen, whence we may infer that it was most probably collected by Zeyher." It has since been found by Mr. Culver, and though Mr. Bolus has not seen any authenticated specimen, he has little doubt of their identity, as Mr. Culver's specimens agree very well with Reichenbach's brief description, and no other *Pogonia* is known from South Africa. We have in the British Museum Herbarium a *Pogonia* collected by Zeyher (No. 1584), evidently identical with that figured in the *Icones*.

A. B. RENDLE.

From NATURE, Nov. 16, 1893.

THIS is an excellent work, devoted to the orchids of extra-tropical South Africa, and arranged on the lines of the "Refugium Botanicum" of Mr. Wilson Saunders. The first part includes fifty plates, containing figures and dissections (partly coloured) of fifty-one species. The text comprises descriptions in Latin and English, references to original descriptions, synonymy, geographical distribution, with critical and explanatory notes. The author's many years of careful study of South African orchids, as well as his previous writings on the subject, are sufficient guarantee of the quality of the work ; and as regards the plates, a decided improvement is noticeable, both in the drawings and lithography, as compared with his previous "Orchids of the Cape Peninsula" (reviewed in NATURE, vol. xxxix. p. 222). The work will be of great use to the systematic botanist, for, as Mr. Bolus has well pointed out, few orders of plants stand more in need of illustration from living specimens than orchids, because of the high degree of specialisation of many of the parts, some of which are very fleshy, and seldom recover their shape after soaking or boiling. Nine new species are described in the present part, *Angræcum caffrum*, *A. Maudæ*, *Habenaria Galpini*, *Satyrium Guthriei*, *S. ocellatum*, *Pachites Bodkini*, *Disa sabulosa*, *D. Conferta* and *Brownlea Galpini*. There are strong grounds, however, for suspecting that *Satyrium Guthriei* is not a true species, but a natural hybrid. It was described from a single living specimen found growing with *S. candidum*, Lindl., in burnt-off places on the Cape Flats, Tokai, near Cape Town, by Mr. F. Guthrie. Mr. Bolus remarks that the column "resembles in some degree that of *Satyrium bicallosum*, Thunb., while both are in this respect very different from that of any other Satyrium known. In every other character this differs greatly from *S. bicallosum*, and I very much doubt if it is a natural hybrid." This remark shows that Mr. Bolus had suspicions about the matter. It is a remarkable fact, however, that in every character in which *S. Guthriei* differs from *S. bicallosum* it approaches *S. candidum* : in fact, with the exception of the column, it bears much closer resemblance to the last named species, and as the organs generally are intermediate in character between those of the two species, there seems little doubt that it is a natural hybrid between them. Many such organisms are now known, and as both the species grow in the district, there is nothing improbable about the matter.

There are several points of interest about the work, one or two of which may be mentioned here. The discovery of a new species of Pachites is very interesting, as the original one has only been met with on four occasions. Burchell found a single specimen in 1815 ; Kraus met with another twenty-four years later ; and now, after a lapse of fifty years, Mr. Schlechter has discovered

two more specimens. Mr. Bolus hopes to publish a figure in the next part of his work. It is a curious coincidence that the new species is only known from a single specimen. An interesting note is given as to the affinities of Schizochilus. Sonder had indicated it as a member of the Habenarieæ, but Bentham transferred it to Diseæ. Mr. Bolus again places it near to Habenaria, and his drawings unmistakably show that this is its real position. Mr. Bolus calls attention to a very curious character found in *Satyrium pumilum*, Thunb., which Lindley referred to a separate genus. The flowers are transversely striped with brown, like a Stapelia, and to make the resemblance more complete, they also have a heavy odour of putrid flesh. As it differs so markedly from its allies in these characters, it is evident that we have here an adaptation to secure the visits of the insects which fertilise the Stapelias of the same region. And this reminds us that scarcely anything is known of the fertilisation of South African orchids. Mr. Bolus figures a beetle on the plate of *Disa elegans* (t. 35), which he found upon one of its flowers, with a pollinium attached to its thorax. It is said to be a species of Peritrichia, belonging to a group of well-known fertilisers. "This being only the second instance," remarks the author, "of an insect actually carrying orchid pollen which I have seen during many years' study of Cape orchids, I have thought it desirable to figure it with the plant." Among the undoubtedly handsome species may be noted *Disa ferruginea* Swartz, and *D. graminifolia*, Ker. The former is noted as "abundant on Table Mountain," and its dark orange-vermilion flowers are "largely sold in bouquets in the streets." The latter was called *Herschelia graminifolia* by Lindley, though Mr. Bolus considers Herschelia as only a section of Disa. We are told that "it is one of the commonest species within our limits, has a rather long flowering period, and attracts universal observation by its beauty and brilliancy; so much so, that Lindley, in dedicating it to the great astronomer Herschel (who was also a great orchid-lover and cultivator), felicitously speaks of it as "species hæc pulcherrima *colore cæli australis* intense cæruleo superbiens!" Future parts of this useful work will be awaited with interest. R. A. Rolfe.

From THE ORCHID REVIEW, September, 1893.

This is a work for which we have nothing but praise. Its object, as set forth by the author, is to give an accurate figure with dissections, taken from living specimens wherever possible, of the Orchids of South Africa, which, as is well known, are both numerous and interesting. The first part, now before us, contains fifty plates, with four exceptions partly coloured, from drawings by the author, which will prove invaluable as aids to the identification of these plants. Mr. Bolus has qualified himself for the work by many years of careful study, and his papers in the Journal of the Linnean Society, with his later "Orchids of the Cape Peninsula," are sufficient guarantee of the quality and reliability of the work. The present volume may be compared with the "Refugium Botanicum," as regards its arrangement, while, in the execution of the plates, it shows a decided improvement on the earlier work of the same author.

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W. WESLEY & SON, 28 ESSEX STREET, STRAND, LONDON.

LYCASTE SKINNERI ARMENIACA.

THE subject of our present illustration is the beautiful Lycaste Skinneri armeniaca, one of the ornaments of the collection of Reginald Young, Esq., of Sefton Park, Liverpool, from whom we received the photograph, together with a fresh flower and the following interesting remarks :—

"The photograph represents a portion of the original plant which was exhibited before the Orchid Committee of the Royal Horticultural Society on March 11, 1890, when it was awarded a First-class Certificate (votes unanimous), under the name of Lycaste Skinneri, Young's variety. It was at the same time well and tersely described as follows :—'This variety is

Fig. 7. LYCASTE SKINNERI ARMENIACA.

the counterpart of the best form of Lycaste Skinneri alba, but the labellum has over it a shade of pinkish orange or apricot colour, and the petals the same hue more faintly displayed. It is a very charming and unique variety.' It was also figured and described in *Reichenbachia*, under the name of Lycaste Skinneri armeniaca. In March, 1892, it bore six blooms, and in February, last year, only two. It was then I decided to try the effects of hybridisation. Looking around for something to cross it with, I could find nothing in my collection which appeared at all likely to produce a prettier or more beautiful flower, and taking into consideration

the rarity and value of the variety itself, I determined to cross one flower with the pollen of the other. The seed pod as depicted in the photograph is the result. The flower was fertilised on February 20, 1893, and about eleven months later the pod was fully ripe. The seed has now been sown in two pots, Maxillaria grandiflora and Lælia elegans."

It is certainly a superb variety, though the photograph gives no idea of its elegant colour. It is also considerably reduced, but the following are the dimensions of the flower:—It measured slightly over six inches from tip to tip of the lateral sepals, and each sepal was over one inch and five-eighths broad. The petals and lip are rather less spreading than in some varieties, and their light apricot tint, so well commemorated in the name, imparts to the flower a great charm, and contrasts effectively with the other varieties of this fine plant. The capsule introduces a novel feature into the illustration, and we think Mr. Young has done well in seeking to increase this unique variety by the method adopted. It will be interesting to observe whether it comes true from seed.

Lycaste Skinneri armeniaca, *Reichenbachia*, ser. 2, vol. i. p. 39, t. 18.

LYCASTE SKINNERI ALBA.

It would be very interesting to readers of THE ORCHID REVIEW if Mr. Young would state his mode of treatment, as really his success (see page 64) makes one's mouth water. I was in Paris last week, and saw in a shop close to the Grand Hotel two plants of ordinary Lycaste Skinneri, each with twenty-four blooms, some spikes bearing two flowers. This struck me as being exceptional, but a plant of the variety alba with twenty-four blooms must be a sight worth seeing.

W. W. PALMER.

[We were much struck with the beauty of the photograph, and should have reproduced it but for the circumstance that we gave a figure in our last volume (p. 113, fig. 8)—which, by the way, was accidentally omitted from the list of illustrations at the end of the volume. Mr. Young's photograph shows a form with broader sepals.—ED.]

NOVELTIES.

LÆLIA ANCEPS VAR. HOLLIDAYANA, O'Brien.—A white variety, introduced from the Orizaba district, by Messrs. F. Sander and Co., of St. Albans. It is evidently very near the one called Dawsoni, having similar broad petals, but a shorter and broader lip, with a carmine-crimson blotch on the square front lobe.—*Gard. Chron.*, Feb. 10th, p. 166.

ODONTOGLOSSUM × IMPÉRATRICE DE RUSSIE.—A supposed natural hybrid between O. Hallii and O. polyxanthum, which appeared in the collection of M. Dallemagne, of Rambouillet, France. The flowers are said to be intermediate, both in shape and colour.—L. Lind., *Journ. d. Orch.*, iv. p. 360.

LYCASTE LUCIANI, Van Imsch. and Cogn.—A Guatemalan species imported by M. A. Van Imschoot, of Ghent, with L. Skinneri, and extremely near L. lasioglossa, Rchb. f. It is noted at page 30 of our January number. —*Journ. d. Orch.*, iv. p. 361.

CATASETUM FINETIANUM, L. Lind. and Cogn. — Introduced from Columbia by Messrs. Linden, L'Horticulture Internationale, Brussels, but apparently a form of the very variable C. tabulare, Lindl.—*Journ. d. Orch.* iv. p. 362.

MAXILLARIA LINDENIÆ, Cogn.—A beautiful species apparently allied to M. venusta, Lindl., which is dedicated to Madame L. Linden. The flowers are large, the sepals and petals acuminate, the colour white, with reddish stripes on the lateral lobes of the lip, and yellow in front. It also was introduced by Messrs. Linden.—*Journ. d. Orch.*, iv. p. 362.

MAXILLARIA MIRABILIS, Cogn.—A brilliantly coloured species near M. fucata, Rchb. f., with the same origin as the two preceding.—*Journ. d. Orch.*, iv. p. 363.

THE HISTORY OF ORCHID CULTIVATION.

PART II.

(*Continued from page* 48.)

OUR last paper brought us down to the end of the eighteenth century. One work, however, commenced before its close, deserves a passing mention. This is *Andrews' Botanist's Repository*, which first saw the light in 1797. The first volume contains figures of Stenorhynchus speciosus (t. 3), Epidendrum cochleatum (t. 13), Habenaria ciliaris (t. 42), and Liparis liliifolia (t. 65), all of which have already been mentioned. The drawing of the first was made in the collection of Lady Archer, of Ham Common; the two next in Messrs. Lee and Kennedy's Nursery, at Hammersmith; and the last in the collection of the Marquis of Blandford. A record previously overlooked relates to Orchis globosa, a European species, said to have been cultivated before 1792, by William Pitcairn, M.D.

The early years of the present century were overshadowed by the Napoleonic wars, consequently we find that only about thirty additional

species were introduced up to 1813, when the second edition of *Aiton's Hortus Kewensis* appeared. These we may now consider.

The year 1800 appears to have witnessed the advent of the first East Indian species, when, thanks to the exertions of Sir Joseph Banks, three species of Geodorum—G. citrinum, G. dilatatum, and G. purpureum—and Acampe multiflora were introduced. Aërides odoratum was also obtained from Cochin China through the instrumentality of the same gentleman, while Ponthieva glandulosa was introduced from the West Indies by Mr. Woodford. Vanilla planifolia was also re-introduced by the Marquis of Blandford, and this time evidently with more success, for soon afterwards it was well figured by Andrews (*Bot. Rep.* viii., t. 538) from the collection of the Right Hon. C. Grenville, of Paddington, the plant being recorded as the finest in England.

The first Australian Orchid introduced was Dendrobium speciosum, obtained by Sir Joseph Banks in 1801; in which year the North American Orchis spectabilis was introduced by Francis Masson.

In 1802 the North American Goodyera pubescens appeared, being credited to H.R.H. the Duke of Kent; while Bletia hyacinthina was introduced from China by T. Evans, of the India House.

The next addition was Cyrtopodium Andersonii, which was sent from St. Vincent in the West Indies, together with many other fine plants, by A. Anderson, in 1804, and, according to Andrews, flowered in the collection of T. Evans, of Stepney, in 1811.

The year 1805 was more prolific, as seven novelties are recorded. Sarcoglottis picta was received from Trinidad by T. Evans, while another West Indian species, Stelis micrantha, was introduced by the Marquis of Blandford. Disa cornuta and D. spathulata were introduced from the Cape of Good Hope by G. Hibbert. Calypso americana was introduced by R. A. Salisbury from North America, and Habenaria bracteata by Messrs. Napier and Chandler. Lastly, the North European Habenaria hyperborea was obtained by the Right Hon. C. Grenville.

Brassia maculata was added to the list in 1806, being introduced from Jamaica by Sir Joseph Banks, and Stenorhynchus orchioides by Mr. Woodford. Habenaria cristata was also introduced from North America by John Fraser, and Serapias cordigera from South Europe by the Marquis of Blandford.

In 1808 Cypripedium arietinum was introduced from North America by Messrs. Chander and Buckingham.

The year 1810 witnessed an irruption of Australian species, as the following six were sent from New South Wales by George Caley:—Diuris aurea, Thelymitra ixioides, Caladenia alba, Glossodia major, Pterostylis major, and P. obtusa. Dendrobium linguiforme was also introduced by Rear-Admiral Bligh.

The latest introduction recorded in Aiton's work is Oncidium bifolium, which appeared with Messrs. Loddiges in 1811. The following year it was figured in the *Botanical Magazine* (t. 1491), whence we learn that Messrs. Loddiges received it from a gentleman who informed them that he brought it from Monte Video, and that being hung up in the cabin without earth it continued to flower the greater part of the voyage home. We further read —"It seems to propagate readily by the bulbs, and promises to be a great ornament of our stoves."

A succession of figures appeared in the *Botanical Magazine* and the *Botanist's Repository*, whence we obtain occasional glimpses of the methods of cultivation followed. One of the first collections in which special attention was paid to Orchids was that of Mr. Woodford, of Vauxhall—an "inexhaustible source of curious plants"—whose gardener, Mr. Watson, is said to have been more than ordinarily successful in their management. Among species figured from his collection we may note, commencing in 1801, Brassavala cucullata (*Bot. Mag.*, t. 543); Epidendrum cochleatum (t. 572), said to be "now not very uncommon, considering the difficulty attending the culture of plants naturally parasitical"; E. elongatum (t. 611), which "continued in bloom during nearly the whole of the summer"; Oncidium carthaginese (t. 777), a "very rare species"; Cypripedium pubescens (t. 911, as "C. parviflorum"); Stenorhynchus speciosus (t. 1374); and Spiranthes cernua (t. 1568). Mr. Watson recommended that they should be placed in a shady position in the bark stove, and that the roots should be protected with knobs of old tan, and only sparingly watered, but the air should be kept hot and damp.

Another celebrated collection was that of Mr. G. Hibbert, of Clapham Common, where the following drawings were made:—Cymbidium sinense (*Andrews' Bot. Rep.*, t. 216), "cultivated in one part loam and three of peat or leaf mould"; C. ensifolium (t. 344); Phaius grandifolius (t. 426), noted as a magnificent species which flowers annually in the tan bed from November to April, in a compost of rich earth and frequently watered; and Epidendrum fuscatum (t. 441).

From the collection of Mr. T. Evans, "of the India House," Stepney, we note Satyrium ochroleucum (*Andrews' Bot. Rep.*, t. 315); Geodorum citrinum (t. 626); Cyrtopodium Andersonii (t. 651); and Sarcoglottis picta (*Bot. Mag.*, t. 1562).

The collection of Messrs. Loddiges, of Hackney, afterwards became famous, hence it is interesting to note any facts about it in these early days. Bletia verecunda was figured in 1806 (*Bot. Mag.*, t. 930), while Ornithidium coccineum (t. 1437) and Oncidium bifolium (t. 1491) came six years later. Under t. 1437, speaking of the difficulty of cultivating the "parasitic" Orchideæ, we read that "of late years, however, by planting them in a mold composed chiefly of decayed wood, and covering the surface with large

pieces of bark, some cultivators have succeeded to admiration with many of them."

A few other figures are worthy of mention. Thus Stenorhynchus orchioides, figured in 1807 (*Bot. Mag.*, t. 1036), is noted as a rare and beautiful species which flowered in the collection of Mr. E. J. S. Woodford, of Rickmansworth; Bletia hyacinthina (t. 1492) flowered with Messrs. Lee and Kennedy, of Hammersmith; Satyrium carneum (t. 1512) with Mr. Griffin, of South Lambeth; and Cypripedium arietinum (t. 1569) with Mrs. Whitley.

These facts indicate pretty clearly the condition of Orchid culture during the first thirteen years of the present century, the period covered by Aiton's work; also the location of the principal collections. The success attained by these early pioneers was very moderate, though they were evidently not lacking in enthusiasm, and indications are not wanting of an attempt to attain a rational system of culture, which was largely hampered by a very imperfect knowledge of the natural conditions under which the plants grew in their native habitats. Some of them, however, were evidently well-grown, even in these early days, for in 1815 the following paragraph appeared in the first volume of the *Botanical Register* (t. 17), under Epidendrum nutans:—

"The cultivation of tropical parasitic vegetables was long regarded as hopeless with us; it appeared a vain attempt to find substitutes for the various trees each species might effect, within the limit of a hothouse. But experience has shown, not only that they succeed as easily as any other plants from the same climate, but that, from the little space they occupy, they are peculiarly well suited to the stove, for which their curious structure and beauty render them the most desirable acquisitions. We are told that they should be planted superficially in proportionate pots of hazel loam, and placed on the shelf or the flue of the hothouse, but never plunged into the bark bed."

Thus the foundations of modern Orchid culture were gradually being laid. Our next paper will show a striking advance in the development of the "cult."

(*To be continued.*)

CATTLEYA LABIATA PEETERSII.

A very remarkable form of Cattleya labiata has appeared in the establishment of M. A. A. Peeters, St. Gilles, Brussels, of which we have received the flowers. The colour is an intense rose-purple—the darkest we have seen—but irregularly variegated with a lighter shade, which gives it a very striking appearance. The colour even extends down the ovary in irregular streaks. It is somewhat analogous with C. Mossiæ Peetersii, according to the description—for we have not seen it. The present form is both very distinct and handsome.

THE HYBRIDIST.

Lælio-cattleya × Doris.

Another extremely beautiful hybrid from Lælia cinnabarina has appeared. This species has proved eminently satisfactory to the hybridist, having lent its aid in the development of a novel and very pleasing colour, which may be described as a sort of Indian yellow or flame-colour, passing into shades of orange. Lælia × flammea, Lælio-cattleya × Hippolyta and L.-c. × Phœbe are examples. Our novelty was obtained by crossing the same species with the pollen of Cattleya Trianæ, in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Wm. Murray) —a collection famed for the sterling quality of the hybrids which have originated there. It has now flowered for the first time on a very small and juvenile plant, a single flower being produced. It measures four inches in diameter, the sepals and petals spreading, of a brilliant saffron-yellow or light orange, and the petals over an inch broad. The lip is obscurely three-lobed, strongly undulated, and the front lobe oblong, slightly recurved and well expanded. The colours are charming. The side lobes are light yellow, also the disc of the front lobe, the latter being very broadly margined with bright rose-purple. It is a most striking thing, and when the plant has become stronger, after one or two more seasons' growth, will certainly develop into a great beauty. It is comparable to Lælio-cattleya × Phœbe, raised in the same collection, but that has flowers of a much deeper orange and a quite distinct lip.

Cypripedium × Morganiæ Langleyense.

This interesting hybrid Cypripedium was exhibited by Messrs. James Veitch and Sons at the Royal Horticultural Society's meeting at the Drill Hall on January 16th. It is the first that has flowered in which the remarkable C. Stonei platytænium has participated in the parentage. As the parent seed is C. superbiens, the resulting progeny is so near C. × Morganiæ, raised from C. Stonei and C. superbiens, that it must bear the same name, but, as might be expected, some of the characteristics of the pollen parent are distinctly discernible in the hybrid, which differs chiefly from the original C. × Morganiæ in the following particulars: The flowers are larger in all their parts; the spots on the petals are more isolated and of a brighter colour; and the lip is also more brightly coloured. It was deservedly awarded a First-class Certificate by the Orchid Committee.

Cypripedium × Robinianum.

This is specially interesting as the first hybrid derived from Cypripedium Parishii, being obtained by crossing that species with the pollen of C. Lowii. It has the dorsal sepal almost of the former and the petals of

the latter, both, however, being slightly modified. The lip also is much like that of C. Lowii. The staminode is broadly obovate, with a small tooth at the base, as in both parents. The flowers are racemose. It was exhibited by Messrs. Linden, of Brussels, at the meeting of the Royal Horticultural Society held on December 12th last. It is named after a son of R. H. Measures, Esq., of The Woodlands, Streatham.

Cypripedium × Niobe, Short Hills var.

This is a distinct and handsome variety, which differs considerably from the typical form (*Orchid Review*, i. p. 7, fig. 1). The dorsal sepal is veined throughout with purple, even to the apex, leaving only a very narrow white margin; the petals spread at an angle of 45° from the perpendicular, and the pouch of the lip is very short, measuring only three-quarters of an inch in front. It is a dark and handsome form, raised by Messrs. Pitcher and Manda, Short Hills, New Jersey, U.S.A., from whom we have received a flower, in excellent condition, in spite of its long journey across the Atlantic.

Cypripedium × Niobe magnificum.

This is another beautiful variety, of the same origin as the preceding, and received with it. In shape it is almost identical, but in colour remarkably different, for the purple veining of the dorsal sepal is quite absent, or rather limited to the broad deep purple median band. The basal third is very light green, the remainder being pure white. It is also a little broader and shorter than in the preceding. The petals are also a little broader and still more spreading, the lip equally short, and the staminode wholly bright purple except a narrow white margin. It is a chaste and very beautiful form.

Cypripedium × Horneri.

This is a rather distinct hybrid raised by Mr. H. Horner, gardener to Colonel Marwood, of Flowergate, Whitby, from Cypripedium Boxallii ♀ and C. Argus ♂. Thus it bears a general resemblance to C. × vernixium (C. Argus ♀ × C. villosum ♂) in shape, but the petals and dorsal sepal are all rather heavily spotted with dark purple-brown on a light green ground. The dorsal sepal has a narrow white margin, and the superior halves of the petals are suffused with a light purple tint. The lip is pallid with a slight suffusion of faint purple, and the staminode bears a dark green central tubercle. In general appearance it most resembles the mother plant.

Cypripedium × Lauræ.

A pretty hybrid Cypripedium has been raised in the collection of Richard le Doux, Esq., of Marlfield, West Derby, Liverpool, from C. villosum ♀ and C. × superciliare ♂, which has been dedicated to this gentleman's wife. It bears some little resemblance to C. × Harrisianum,

as would be expected from the fact that the pollen parent is a hybrid from C. barbatum ♀ and C. superbiens ♂. The dorsal sepal is green veined and spotted with very dark brown and a white margin. The petals are brown on the superior halves, the remainder being green, and the basal part densely spotted with very dark brown. The lip is light-coloured, somewhat resembling C. superbiens, and the staminode broadly obcordate.

CYPRIPEDIUM × GRAVESIÆ.

The Cypripedium shown in the annexed figure is a fine hybrid raised in the collection of H. Graves, Esq., of Orange, New Jersey, U.S.A., by Mr. R. M. Grey, from whom we received the photograph with descriptive

Fig. 8. CYPRIPEDIUM × GRAVESIÆ.

notes. It is said to have been derived from C. Argus ♀ and C. niveum ♂. Mr. Grey considers it one of the finest hybrids of the group which he has seen, and compares it with C. × Paris (*Orchid Review*, i. pp. 87, 88, fig. 6). Its general character is well shown in the figure. The dorsal sepal is described as one and three-quarter inches broad, white shaded with vinous purple on the sides, the centre veined with light green nerves which are dotted with brown. The petals are bright vinous purple shading to white at the base and heavily dotted with purple, the basal nerves being

pale green. The lip is suffused with purple in front, paler behind, the nerves being light green. It is named in compliment to Mr. Graves. It is evidently a fine thing, but the colour is suggestive of some parent with more purple in it than C. Argus.

Cypripedium Inspirator.

A beautiful hybrid raised in the collection of M. Jules Hye from Cypripedium Spicerianum superbum ♀ and C. tonsum ♂, and most like the former in the character of the dorsal sepal.—Kerchove in *Rev. Hort. Belge*, Feb., p. 25.

NURSERY NOTES.

The species of Phalænopsis are one of the features of the Clapton Nursery, as Messrs. Low have long cultivated them with great success. During February they are a sight worth seeing, unless, as occasionally happens, the flowers have been cleared off by fogs. At a recent visit we found some five hundred spikes of P. Schilleriana, of which nearly half were in bloom, some having been cut and others still in bud—the whole forming a charming sight. As usual when a large batch is grown, a considerable range of variation is observable, both in shape and colour, and a few of the plants were particularly warm in tint. Interspersed with them were a number of P. Stuartiana, grandiflora, and Aphrodite, but the two latter had suffered by fogs some time previous, and a number of the spikes were completely lost. The hybrid P. × leucorrhoda was also in flower, together with the pretty little P. rosea and P. denticulata—the latter evidently a free grower, and in several cases we noticed sturdy well-rooted young plants growing from the racemes. The plants stand on an open wooden stage, so that the air can circulate freely among them, but some distance below is a second solid stage, covered with a layer of broken bricks, which, being kept well watered, help to preserve a humid atmosphere, so essential to their well-being. A batch of over a hundred plants of Angræcum citratum were showing for flower. Miltonia Roezlii also is grown in quantity and succeeds admirably, a large number of plants being in flower, and very charming they looked. Four plants of Lælia glauca carried eight fine flowers, while two plants out of a batch of Cattleya Percivaliana showed unusually deep golden-yellow markings in the throat. Many Cypripediums were in flower, one called C. × Smithii, derived from C. Lawrenceanum and C. ciliolare, being particularly good. Many Vanda Amesiana were still out, and a fine batch of Oncidium ampliatum in bud. Besides which, several Dendrobiums, Odontoglossums, and other plants helped to brighten up the houses. We also saw a large importation of Cattleya labiata, only twenty-three days in transit,

another of C. Trianæ, containing some wonderfully strong plants, and a third of the new and interesting Cypripedium Charlesworthii—all of them having arrived in excellent condition.

ORCHID HYBRIDISATION.

(*Continued from page* 52.)

We may now assume that our hybridist has a fine plump capsule fast approaching maturity, and the next question is what to do with it. Hitherto all has been comparatively straight sailing, but now his troubles begin. It is a much easier matter to get plenty of plump capsules than to get the seed to germinate, and bring the young seedlings safely through the perils of infancy. Difficulties, however, must be met and overcome, and the hybridist, having travelled so far on the road to success, is not likely to be lightly turned aside by a few obstacles.

Mr. H. J. Veitch, in a very interesting paper on Orchid Hybridisation, read at the Orchid Conference (*Journ. Roy. Hort. Soc.*, vii. pp. 22–36), speaking of the early experiments made at the Royal Exotic Nursery, states that every method that seemed at all favourable was tried—blocks of wood, tree-fern stems, strips of cork, and the moss of the pots in which other Orchids were grown—but only with moderate success, while at first failures were innumerable. The latter method is the one now generally adopted.

Not every capsule, however, by a long way, contains good seed, and to sow chaff and expect to reap a subsequent harvest is as futile as it would be in the case of the agriculturist. Orchid seeds, however, are so minute that the aid of a good lens is necessary in order to determine whether they are perfect. As soon as the capsule shows the least sign of bursting, it should be cut off, and placed in some receptacle to prevent the seed from being lost. When the valves open, the seeds appear almost innumerable. They should then be examined with a lens, or a few of them placed under a microscope. If the elongated and wrinkled testa is plump in the centre, and shows a darker rounded embryo inside, all is well, but if only an empty husk appears, it may be thrown away without hesitation. But it is necessary to proceed with caution, as a very few good seeds may be present among an intolerable deal of chaff. Generally speaking it may be said that not one-tenth of the seeds contain an embryo, and frequently the proportion is infinitesimal, even when some good seeds are present. A little care and experience will soon enable one to judge whether the contents are of any value. Every hybridiser now knows that many an apparently good capsule contains nothing but chaff, and practical cultivators do not sow chaff. Hundreds of capsules, however, are said to have been sown without any result, but it is at least probable that many of them never contained any good seeds.

If any good seeds are found, they should be sown upon the compost of some growing plant which requires the same treatment, always selecting one in which the materials are in healthy condition, and can be left for months undisturbed. It is now that the difficulty arises. Such minute seeds are very easily washed away, and to obviate this it is customary to keep the compost moist by partial dipping, and by very lightly spraying with the syringe, where possible. The atmosphere must also be kept in a healthy condition, both with regard to warmth, humidity, and proper ventilation. The embryos now begin to swell very gradually, and pass into what is termed the thalloid stage, in which they remain for a considerable period, frequently several months, before roots are produced. This is the critical period. A little neglect in watering or keeping the compost too wet may be fatal. A few hours of London fog, or a succession of dull sunless days will cause considerable mortality, though these conditions are not under the control of the cultivator, as are the others. Undue stimulation must also be avoided. Indeed the cultivator must exercise discretion and patience, remembering that during their early stages these plants are liable to be injured by little irregularities which would have no susceptible effect on older plants. Seedlings of Phalænopsis, Calanthe, and Cypripedium are said to be especially liable to injury during this thalloid stage.

With proper care, however, the young seedlings will gradually progress, and in due time roots and young leaves will begin to push. When these have made a fair start the young plants may be pricked off, or potted singly into small pots, care being exercised to avoid bruising the delicate tissues in any way. This operation safely performed they will gradually progress towards maturity, and must be treated in all respects like older plants.

Throughout the whole operation a few cardinal points should not be lost sight of. In a wild state when the capsules burst the seeds fall, or are scattered near the parent plant, and are subject to like conditions. The cultivator who can grow any Orchid successfully need not despair of raising it from seed, provided only that healthy seed can be obtained. The same course of treatment must be followed, for Nature is much the safest guide to follow, and her behests cannot lightly be set aside. The conditions under which Orchids are grown in our houses at home are very different from those which obtain in their natural habits, especially with regard to light during the winter months, but this affects both seedlings and older plants, though perhaps not in the same degree, so that if one can be grown successfully there is at least a good chance for the other.

Slugs are especial enemies to the hybridist, and must be kept under at all costs. Many a time have they ruthlessly dispelled the fondest hopes of the cultivator. Mr. Veitch records an instance of Dendrobium nobile nobilius crossed with D. aureum, from which a single seedling only was raised. This was naturally highly prized and tenderly cared for, and it had

grown to a height of about one and a half inches, when, one night, a vulgar snail devoured the precious morsel at a single meal. Another case occurred in Messrs. Veitch's establishment. A single seedling had been obtained from a pod of Phalænopsis Aphrodite crossed with P. rosea, and they were particularly anxious to save it because it was hoped that it might solve the origin of P. × intermedia, a suspected natural hybrid with this parentage. The plant had developed three healthy leaves, and stood on an inverted flower pot in a pan of water, but one morning, to Mr. Seden's great dismay, it was discovered that a slug had eaten two of the best leaves. It was certain that unless the marauder was caught the plant was doomed. A strict watch was therefore kept for hours, and the moss was repeatedly ducked in water to unearth the delinquent. At length the culprit issued from his hiding place, and here the curtain falls, though we doubt not that a dreadful tragedy was enacted. We may add that the plant lived to tell the story — namely, that those who desire plants of Phalænopsis × intermedia have only to set about crossing the two Philippine species P. Aphrodite and P. rosea. Slugs must be ruthlessly hunted down, but as a further safeguard any choice seedlings should be stood on inverted pots in pans of water.

Thrips are terrible pests, even to established plants, and from their minuteness are difficult to cope with. But when they attack young seedlings the case is serious. It is recorded that a single thrip is sufficient to compass the death of a young Odontoglossum if it once gets into the heart. A constant watch must therefore be kept for these pests, which must be kept in check by the usual remedies.

(*To be continued.*)

Speaking of Orchid Hybridisation, I notice in Frederick Boyle's very charming book *About Orchids*, page 241, that he lays great stress on the necessity of exposing the ripening seed to the full blaze of the sun. Now, my best results have been obtained in the shade, and I know of others whose experience is the same. I will cite one instance, I crossed a flower of Cypripedium × politum with the pollen of C. Boxallii atratum, both plants being grown in a house where the sun's rays rarely penetrate. The seed pod ripened in January, 1892, the plant remaining all the time in the same shady spot, and the seed was sown on a pot of C. × chloroneurum similarly situated. Seedlings were first noticed in June of the same year, and since then I have potted off some fifty plants, fresh seedlings making their appearance as late as last December.

I would here remark that apparently two years at least may elapse after sowing the seed without visible result, before the hybridiser need despair of success.

I do not wish to pose as an authority on hybridisation as I have had far too short an experience, but possibly a few facts that have come under my own observation may be of some interest to readers of the ORCHID REVIEW.

REGINALD YOUNG.

[We hope other correspondents will favour us with their experience on this interesting subject.—ED.]

GRAMMATOPHYLLUM SPECIOSUM.

A fine plant of Grammatophyllum speciosum in the Botanic Garden at Penang forms the subject of a note in the *Gardeners' Chronicle* for November 18th (p. 622), by Mr. C. Curtis. It is over forty-two feet in circumference, and this year has produced twenty-four spikes from seven to eight feet long, and bears over a thousand flowers. It grows on a mound three to four feet high, in the full sun. Once or twice a year half a cartload of leaf-mould is scattered about its roots, which is all the attention it receives. It is said to be widely distributed in Malaysia, though apparently nowhere abundant, and the finest plants are generally found high up in the forks of not very leafy trees, where it gets an abundance of light. These hints should be useful to those who are cultivating the plants at home. It has flowered in this country on at least two occasions, though few people care to possess it, on account of its gigantic size. It is a magnificent plant, as seen in its native home.

CALENDAR OF OPERATIONS FOR MARCH.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperature for this month should be as follows: the cool house, by day, 55° to 60°; night, 53°; morning, 48°. The Intermedia, Cattleya, or Mexican house, by day, 63° to 68°; night, 63°; morning, 58°. The warm or East India house, by day, 70° to 75°; night, 68°; morning, 65°. In bright, sunny weather the day temperature may go a few degrees above these figures, and if the outside conditions are exceptionally cold, a few degrees below, both night and day, will be preferable; but should the conditions be favourable for free ventilation, these figures should be a guide. On most days now it will be necessary to damp down three times, morning, noon, and night.

Orchids are strange plants; their peculiarities often take one a long time to fathom, which is the chief cause why the occupation of Orchid growing is so extremely interesting. To many a cultivator the great beauty of the flowers is but a secondary consideration. He becomes so

deeply absorbed in their culture and general welfare, that in time the great fascination is to note how this or that plant behaves in a new position, or, in other words, to find out the exact conditions necessary for the culture of some Orchid which has hitherto baffled all attempts to keep it alive for long together, not to mention cultivating it successfully. The most experienced and skilful grower has plenty of scope in this direction, as there are many old and well-known Orchids which have yet to be actually conquered, in addition to strangers which are continually arriving.

Sometimes the best way to treat an Orchid is found out by mere accident, but often years pass by, and many experiments are made before complete success is attained, when it frequently becomes apparent how painstaking we have been to despatch our plants by kindness, or, in other words, by "coddling," or by depriving them in our ignorance of something which is essential to their welfare. This, at least, should point the moral that a plant should not be allowed to remain in one position if it does not grow well. A slight alteration sometimes make a great improvement.

Let us take the beautiful genus Dendrobium, as few are more useful or easy to cultivate. There are some that succeed best in the Cattleya house, both during the growing and resting season. These are principally those from the east coast of Australia, and amongst them may be mentioned D. speciosum, D. Kingianum, D. tetragonum, and D. linguiforme. Then there are some which delight in the temperature of the cool house, such as D. Jamesianum, D. infundibulum, D. longicornu, D. amœnum, and D. Falconeri. When D. Jamesianum is newly imported it is observed that the plants grow on branches of trees in their native habitat. And this accounts for the general practice of trying to grow them on blocks of wood. This system of Orchid culture on blocks of wood usually ends in failure, and it is not surprising when we take into consideration the important differences between the living branches of trees and our blocks of wood, which must necessarily be dead; also in the natural climatic conditions of their native habitat from those of our glass structures. It is possible to grow an Orchid in this manner for a year, or perhaps two; then the block decays, and with it the plant. Supposing that it were possible to transfer the plants without injury to the roots every year to new green blocks of pear, or apple wood, then, no doubt, many species would grow better. But this trouble is unnecessary, as freshly-gathered sphagnum moss and newly-dug fibrous peat—the nearest approach we can get to the natural green wood—answers the purpose admirably, for these materials are "alive," and remain so for a considerable period, and when spent should be renewed. The plants should be grown in small pans or baskets.

The most healthy plant of Dendrobium Falconeri that I have seen, and

one which actually increases in size year by year, is grown in the temperature of a greenhouse the whole year round on the stem of a living tree-fern, and naturally shaded by its large fronds. The beautiful D. Falconeri giganteum is best grown in the Intermediate house.

Most other species of Dendrobium, however, require strong heat, light, and an abundance of moisture when growing, but when at rest it becomes again necessary for them to part company, some being better suited in one temperature and some in another. But as the resting season is now nearly over and new growth about to commence, this point may be left for the present. Suffice it to say, that on the character of the rest given the behaviour of the plants during the forthcoming season of growth largely depends.

The house where Dendrobes are grown should be rather a lofty structure, so that the plants may occupy positions high up near the glass, where the warm, moist air can freely circulate round about them. The possibility of the young new growths damping off is then at a minimum. I have never seen Dendrobes grow really satisfactorily in a low-built structure; the atmosphere must be as lively and buoyant as possible, and this is more likely to occur in the former than in the latter house. The many lovely varieties of D. nobile (still one of the best) and the many beautiful hybrids owning it as a parent, are now making a grand display; also the sweet-scented D. aureum, the delicate D. Findleyanum, the stately D. Wardianum, D. crassinode, and their various hybrids. After the flowering period is past, a genial temperature of between 60° and 70° is warm enough until the days lengthen and the sun's rays become more powerful, and then a hot moist temperature is most advantageous.

There are other genera of Orchids sometimes spoken of as intermediate, but which really require hot treatment during the growing season, and no better place can be found for the following than alongside the Dendrobiums, suspended near the glass—in fact, the same cultural conditions, both while growing and at rest, is advisable. These include the following: Stanhopeas, Catasetums, Mormodes, Cycnoches, Chysis, Coryanthes, Gongoras, Schomburgkias, Galeandras, Cyrtopodiums, and Spathoglottis. A very pretty species of the last named is S. Viellardii (Angustorum), whose lovely flowers are of a dark, bright rose colour, and produced on a tall spike, in a cluster of ten to fifteen, from October to January. As the first flowers fade and pass away, new ones continually take their place. It should be grown, as above mentioned, in pans or baskets.

A pretty Orchid in bloom just now is Aganisia cœrulea. It is well worth growing, and succeeds best in a sunny position in the Dendrobium house. On the other hand, a shady position in the same house is most suitable for Paphinia grandis, a very curious and sweet-scented species now blooming, both of which should be kept in the warmest house during

winter. A very pretty Orchid which delights in the same warm treatment is Miltonia Roezlii. The best position I can recommend for this is a naturally damp one. It often happens that the foliage of the plants is covered with moisture at early morning in one part of the East Indian house more than in another. It is in such a place that Miltonia Roezlii will flourish if not too heavily shaded, and such a position I find also suits M. Weltoni.

Phaius tuberculosus is sometimes troublesome to grow; it does best with us side by side with the last-named species. It should be potted in fresh living compost once a year, which must be done now or as soon as the flowers have faded. A slight syringing overhead occasionally does no harm, but to be continually drenching these species with a view of keeping down yellow thrips is not to be commended. At the same time, thrips must not be tolerated, for no Orchids suffer more from their ravages than does Phaius tuberculosus, and tobacco powder dusted down the young growth is all that is necessary to protect them.

A light and airy position in the Cattleya house is most suitable for the other Miltonias, and all that are pushing new growth from the base of the pseudobulbs should be taken in hand and re-potted or re-basketed, if that is necessary. M. spectabilis and its variety Moreliana are amongst the earliest to start. M. vexillaria is a most popular species, and is also best suited in the position just mentioned. It is not a good practice to wet the foliage, or to keep the plants too wet at the roots, as, if so, or if grown in a too cold, or badly-ventilated house, the leaves decay from the apex downwards much more than they would otherwise do. Strong growth is greatly assisted by occasional waterings with liquid manure, made by soaking cow-dung in water. This species has been termed the happy hunting-ground for thrip, but if tobacco-powder is employed there is no difficulty, and "dipping" is never required, which is productive of better cultivation, as the plants, when undergoing this latter operation, are always shaken and broken in a greater or lesser degree.

Cœlogyne cristata is now in full beauty. This old but beautiful species is not easy to surpass. Cœlogynes, as a rule, are not rested long and dry enough to make them grow and flower well, and during that dormant period they delight to be in a cool temperature. Not many, however, will stand the same low degree as C. cristata, which is quite safe, and indeed, the better for it, if wintered in a temperature averaging about 45°, a good rest is most essential to the species of this genus.

The potting of Orchids must be pushed on wherever it can be done. This month should see the Mexican Lælias off hand. Such species as L. anceps, and its numerous white varieties, L. autumnalis, L. albida, L. furfuracea (the two last-named species require less direct sunlight than the former), and L. Gouldiana, not having been kept over moist since flowering,

should now be pushing forth new roots in profusion, which (supposing they require re-potting) are best to enter direct the fresh compost. Water carefully afterwards for a few weeks. About once in two or three years is often enough to re-pot these species, unless the leading pseudobulbs are over the rim of the pot. What a lovely display these have made this year, owing, no doubt, to the last exceptional summer, which must prove conclusively that heat, light, and air are good for them when growing.

Cattleya Trianæ, too, should be attended to as they emit new roots. Cattleya gigas and its varieties are now pushing from the base. These must not be disturbed at this season, but should occupy a high, dry, and sunny part of the Cattleya house, enough water only given to prevent shrivelling for about six weeks, otherwise they may not flower satisfactorily. Lælia Boothiana is another shy bloomer, and is best grown in the same manner as Cattleya gigas. The same may be said of C. Warneri, which starts to grow early, but it should not on that account be given extra warmth or moisture other than this house affords. It is preferable to retard the growth as much as possible until later in the season, as it is then much more easy to flower than when started too soon.

ORCHID PORTRAITS.

GARDENERS' CHRONICLE.

LÆLIA ANCEPS VAR. ASHWORTHIANA. A fine white variety, introduced by Messrs. F. Sander and Co., St. Albans, from the Orizaba district, which received a First-class Certificate from the Royal Horticultural Society on January 16th last. The petals and front lobe of the lip are very broad.—Jan. 27th, p. 103, fig. 10.

DENDROBIUM ATROVIOLACEUM, Rolfe. (See p. 72 of our present issue.) —Jan. 27th, pp. 112, 113, fig. 12.

LÆLIA ANCEPS. A fine specimen of one of the white varieties, grown at Tring Park.—Feb. 10th, p. 172, supplement.

GARDENERS' MAGAZINE.

DENDROBIUM ATROVIOLACEUM. (See p. 72 of our present issue.)—Feb. 3rd, p. 36, supplement.

CYPRIPEDIUM × APHRODITE. A handsome hybrid raised from C. niveum ♀ and C. Lawrenceanum ♂ by Messrs. Veitch.—Feb. 10th, p. 76, with fig.

LÆLIA ANCEPS SANDERIANA.—Feb. 17th, p. 88, supplement.

CATASETUM GNOMUS. A remarkable Brazilian species.—Feb. 17th, p. 89, with fig.

JOURNAL OF HORTICULTURE.

SACCOLABIUM CŒLESTE.—Feb. 1st, p. 87, fig. 13.

CYPRIPEDIUM × ADRASTUS. A handsome hybrid, obtained from C. × Leeanum superbum ♀ and C. Boxallii ♂ by Messrs. Veitch.—Feb. 8th, p. 103, fig. 16.

LÆLIA ANCEPS ASHWORTHIANA.—Feb. 15th, p. 125, fig. 19.

LINDENIA.

AËRIDES LAWRENCEÆ, Rchb. f.—t. 401.

CATTLEYA ELDORADO, Lind., VAR. TREYERANÆ, L. Lind. A fine blush-coloured variety.—t. 402.

CATASETUM IMSCHOOTIANUM, L. Lind. et Cogn.—A light greenish yellow flowered species, allied to C. Hookeri, Lindl., native of Brazil.—t. 403.

CYPRIPEDIUM PHILIPPINENSE, Rchb. f.—t. 404.

ORCHID ALBUM.

CYPRIPEDIUM × SEDENI CANDIDULUM. A form with more highly-coloured flowers than the true plant of this name, and probably obtained from another cross.—t. 481.

CHYSIS LÆVIS, Lindl.—A brightly-coloured Mexican species, which originally flowered in the collection of Mr. Barker, of Springfield, some fifty years ago, having been introduced with C. bractescens. Basket culture is recommended for it.—t. 482.

CYPRIPEDIUM × SELLIGERUM MAJUS.—t. 483.

TRICHOCENTRUM TIGRINUM, Lind. and Rchb. f. A pretty little species, native of Central America. Block culture is recommended, with a small portion of sphagnum moss about the roots, and a shady position at the cool end of the Cattleya house.—t. 484.

REVUE DE L'HORTICULTURE BELGE ET ÉTRANGÈRE.

CYPRIPEDIUM FASCINATUM. A very handsome hybrid, raised in the collection of M. Jules Hye from C. Spicerianum magnificum ♀ and C. hirsutissimum ♂, and thus a fine variety of C. × Ceres, raised by Messrs. Veitch.—February, p. 25, with plate.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

THE February meeting at Ghent was especially interesting, on account of the exhibition of some hybrids obtained by the renowned hybridist, M. Jules

Hye. Cypripedium × Madame Jules Hye, derived from C. Spicerianum superbum ♀ and C. tonsum ♂ is a form of the front rank, which flowered for the first time in November, 1893. C. × triumphans also was exhibited, and both obtained a Certificate of Merit, with felicitations of the jury. The latter first flowered in the August previous, but on its second flowering shows a marked improvement. C. × Albertianum rubrum has the dorsal sepal more brightly marked with purple than in the type. C. × excelsior, derived from C. Druryi ♀ and C. Spicerianum ♂ combines well the characters of the parents. C. × miniatum was probably obtained from C. Spicerianum and C. Fairieanum, on account of its characters. C. × aureum owes its descent to the crossing of C. × Sallieri Hyeanum with C. Spicerianum, and, like the others, which were all raised in the same collection, is a decided acquisition. From the same collection came Miltonia × Bleuana, which received a Certificate of Merit, and a fine Odontoglossum with branched spike of yellowish white flowers spotted with brownish red.

At the meeting of the Orchidéenne, of Brussels, about one hundred and sixty examples were presented by sixteen exhibitors. Among the most remarkable novelties were—Maxillaria mirabilis from Messrs. Linden, the flowers a rich mixture of bright yellow and red; an Odontoglossum called O. × Harvengtense from the Comte de Bousies, like an improved O. × excellens var. dellense; Cattleya Wambekeana from M. Van Wambeke; Odontoglossum × Impératrice de Russie, a supposed natural hybrid from O. Hallii and O. polyxanthum; and Dendrobium Wardianum Lindeniæ, a white form with a yellow spot on the lip. Among other interesting plants may be mentioned—Cypripedium × Harrisianum superbum, Odontoglossum crispum, O. × Ruckerianum, and Cattleya Trianæ, from M. Madoux; Pleurothallis Roezlii, Odontoglossum Ruckerianum and Cattleya Trianæ, from the Comte de Bousies; Lælia anceps Dawsoni, Odontoglossum Rossii maximum, Cypripedium Boxallii atratum and C. × Sallieri Hyeanum, from G. Warocqué; Cattleya Trianæ from M. Treyeran; Cypripedium × Iris (C. × javanico-superbiens × ciliolare) and the beautiful Vanda Cathcartii from M. Bleu; a pretty white Cattleya Trianæ from Dr. Van Cauwelaert, and the very pretty Dendrochilum glumaceum, from M. Cahuzac, of Bordeaux.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

A LARGE number of visitors came to see the exceedingly fine display of fruits and flowers at the Royal Horticultural Society's meeting, on February 13th, in the Drill Hall, James Street, Victoria Street, Westminster. Orchids were

in great force, specimens being exhibited from about thirty different collections in all parts of the kingdom.

A Silver Flora Medal was awarded the President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a fine group, in which several beautiful hybrid Dendrobiums and Cypripediums were represented, in addition to a magnificent specimen of Sophronitis grandiflora, Bulbophyllum mandibulare, B. Careyanum, Masdevallia irrorata and M. Schrœderiana (which appear to be identical), Angræcum odoratissimum, Epidendrum × Endresio-Wallisii and Cymbidium eburneum. A Botanical Certificate was granted to the white variety of Dendrobium purpureum, to the bristle-lipped Catasetum barbatum spinosum, and to the pretty little Masdevallia picturata, with yellow, purple-spotted flowers.

Mrs. Armstrong, Woodslea, near Brighton (gr. Mr. E. Meachen), exhibited what appeared to be Dendrobium × Ainsworthii under the name of D. × Armstrongi (D. aureum ♀ × D. nobile cœrulescens ♂).

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent a spike of Calanthe × Wm. Murray, having a deep red-purple lip.

Mr. W. Denning, Hampton, exhibited a good form of Cattleya Percivaliana.

Mr. J. Fitt, F.R.H.S., Panshanger Gardens, Herts, exhibited a splendid specimen of Cypripedium × Germinyanum under the erroneous name of C. × Roberti. I believe it is the reverse cross of the original C. × Germinyanum.

From the Royal Botanic Gardens, Glasnevin, Mr. F. W. Moore, F.R.H.S., sent flowers of the deep-coloured Vanda tricolor grandiflora, and the paler-lipped variety insignis, Lycaste plana, the white-flowered Angræcum (Listrostachys) porrigens; and Selenipedium Lindleyanum, with three flowers open, and cut from the top of a scape six feet in length.

A finely-spotted Odontoglossum—supposed to be a natural hybrid—came from Lord Haddington's collection, Prestonkirk, N.B. (gr. Mr. Brotherston).

E. W. Hamilton, Esq., Charter, Sunninghill, Ascot (gr. Mr. G. F. Cole), exhibited a splendid specimen of Dendrobium speciosum, bearing five spikes, with an aggregate of about three hundred and fifty creamy flowers, two of the spikes arising from one sheath.

Messrs. Heath and Son, Cheltenham, exhibited some Cattleya Trianæ Ernesti, Cypripedium concolor, and a batch of seedling Cypripediums, which were to all intents and purposes C. villosum in appearance.

C. L. N. Ingram, Esq., Godalming (gr. Mr. T. W. Bond), exhibited Cypripedium × Captain Lendy (C. Boxalli ♀ × C. × Charles Canham ♂), a fine hybrid with a large upper sepal, deep, shining, blackish purple, mottled with green, and having a white and rose-flushed margin. It received an Award of Merit.

Messrs. Laing and Sons, Forest Hill, among other things, staged several white-flowered Goodyera discolor, with dark velvety sap-green leaves, ornamented with a brilliant silvery-white midrib; several Cypripedium Boxallii, C. villosum, C. callosum, Dendrobium Wardianum, &c.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., were awarded a Silver Banksian Medal for a group containing some fine Trichopilia suavis, Lælia harpophylla, L. anceps Sanderiana, Odontoglossum Pescatorei, O. triumphans, and Phalænopsis Stuartiana punctatissima.

A Silver Flora Medal was awarded to Messrs. H. Low and Co., Upper Clapton, E., for a large group of Cattleyas, Phalænopses, Miltonias, Saccolabiums, Cypripedium Chamberlainianum, Lælia glauca, Oncidium ampliatum, and Odontoglossum gloriosum. Special mention must be made of the really gorgeous specimen of Cattleya Percivaliana, of which the deep mauve flowers, with conspicuous golden lip, attracted considerable attention.

From C. J. Lucas, Esq., F.R.H.S., Warnham Court, Horsham (gr. Mr. Duncan), came some fine Phalænopsis Aphrodite, P. Stuartiana, and Cypripedium Argus.

R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. Chapman, F.R.H.S.), obtained an Award of Merit for Cypripedium × Fraseri—a hybrid with a distinctive wine-red colour throughout, the petals being studded with black warts. A Botanical Certificate was granted to a strong plant of Pleurothallis Roezlii, while Cypripedium Argus Mœnsii and C. × Kaloe (C. Argus ♀ × C. barbatum superbum ♂)—the latter with a pointed green, white-and-rose upper sepal—were also shown.

A fine specimen of Dendrobium atroviolaceum, bearing about twenty flowers, was exhibited by G. D. Owen, Esq., F.R.H.S., Selwood, Rotherham (gr. Mr. M. Watts).

Messrs. Paul and Son, Cheshunt, contributed a mass of the best varieties of Cœlogyne cristata, remarkable for their vigorous growth and purity of colour.

A Silver Flora Medal was awarded to Messrs. F. Sander and Co., St. Albans, for a large group containing many choice Orchids. A First-class Certificate was given to a new and vigorous Lælio-cattleya, Hon. Mrs. Astor (C. Gaskelliana ♀ × L. xanthina ♂), which bore two large pale yellow flowers, having a tubular lip with a deep yellow base, and the front washed with rose-purple. Other noticeable plants were Odontoglossum Wattianum with seven flowers, O. facetum, O. Edwardii with two spikes each four feet long, Catasetum fimbriatum, Angræcum Chailluanum, Cattleya amethystoglossa, Arachnanthe Cathcartii, Cymbidium eburneum, Lycaste lanipes, and Anœctochilus Boyleanus—a plant with deep velvety green leaves, charmingly veined with gold. Several unnamed Orchids belonging to the Neottieæ were also shown.

A First-class Certificate was granted to Calanthe × Baron Schröder (C. vestita gigantea ♀ × C. Regnieri ♂, and *vice versâ*), from the collection of Baron Schröder, F.R.H.S., The Dell, Staines (gr. Mr. H. Ballantine, F.R.H.S.)—a fine hybrid, with large, dark, crimson-purple flowers, with slight specks of white on the sepals and petals.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited a plant of Lycaste Skinneri alba, with fourteen flowers arising from one bulb, for which a Cultural Commendation was given; and Cypripedium × Bragaianum (C. hirsutissimum cœrulescens ♀ × C. Boxallii atratum ♂), a fine hybrid, intermediate between its parents.

H. Tate, Esq., F.R.H.S., Allerton Beeches, Liverpool (gr. Mr. J. Edwards), exhibited a vigorous plant of a fine Cypripedium, under the name of C. × tenebrosum (C. × Harrisianum nigrum ♀ × C. Boxallii atratum ♂).

A Silver Flora Medal was given to Messrs. Jas. Veitch and Sons, King's Road, Chelsea, for a collection in which hybrids greatly predominated. An Award of Merit was granted to Lælio-cattleya Tydea (L. pumila ♀ × C. Trianæ ♂), a deep rose-purple hybrid, and to Cypripedium × Godseffianum, a distinct and striking hybrid, which is now pretty well known. Among other things may be mentioned two magnificent plants of Cymbidium × eburneo-Lowianum—one with a spike of six and the other of four very large, soft, creamy-yellow flowers, slightly tinged with rose—Æonia polystachya, and Cypripedium × Cretheus (C. Spicerianum ♀ × C. Argus ♂), with white bordered upper sepal very much reflexed, and dotted with black; petals yellowish green, black spotted; lip large, copper-green, with rosy flush round orifice.

A spike of Vanda teres alba came from Mr. Whillans, Blenheim Gardens, Woodstock.

A Silver Flora Medal was gained by Messrs. B. S. Williams and Son, Upper Holloway, N., for a large collection, in which were represented Cypripedium Rothschildianum, C. × Morganiæ, C. × Sallieri aureum, C. × Williamsianum, C. × Measuresianum, Lælia anceps Sanderiana, the very distinct L. a. Fitchiana, Oncidium bifrons, several hybrid Dendrobiums, &c.

E. H. Woodall, Esq., F.R.H.S., St. Nicholas House, Scarborough, exhibited a fine Cypripedium Rothschildianum, to which a Cultural Commendation was given.

Walter Cobb, Esq., F.R.H.S., Dulcote, Tunbridge, received an Award of Merit for a fine spike of Galeandra Devoniana, in addition to which he exhibited several spikes of Phalænopsis.

Mr. G. Young, Keyfield Nursery, St. Albans, exhibited a new Phalænopsis Youngii, which obtained an Award of Merit. The flowers are white, tinged with rose, the lip being speckled with red at the sides and front.

CORRESPONDENCE, &c.

Cypripedium × Calypso, Oakwood var., sent by Norman C. Cookson, Esq., Oakwood. Wylam-on-Tyne (C. Boxallii atratum × C. Spicerianum), is a bold and handsome hybrid, with a general resemblance to C. × Lathamianum, but the dorsal sepal veined and spotted with purple, except at the margin. The median band is very broad and dark.

O. O. Wrigley, Esq., Bridge Hall, Bury, sends a fine raceme of Oncidium splendidum, well answering to its name, the lips measuring over 1¾ inches broad; and an equally fine Dendrobium Wardianum candidum, with flowers 4¼ inches across, and the flowers pure white with the exception of the yellow disc, on which are a couple of light brownish maroon spots—a chaste and very beautiful variety. The two Cypripediums are C. Bullenianum, Rchb. f., and its variety Appletonianum, Rolfe (*Orchid Review*, I. p. 135). The latter has also been distributed under the name of C. O'Brienianum, and is remarkable for the absence of tessellation in the leaves, though the flowers show no difference. The leaves sent show well the remarkable difference between them.

J. H. Lane, Colesborne. The roots of Cattleya amethystoglossa from plant purchased last autumn are infected with the larvæ of the Cattleya fly (Isosoma Orchidearum), as may be seen by cutting the swollen gall-like growths. The only remedy is to cut off and burn the affected parts, and thus prevent the spread of the pest; for if the gnat-like insect be allowed to mature, it will deposit its eggs on other plants. It is fully treated at p. 180 of our last volume.

W. Stevens, Stone. Odontoglossum × elegantius, a natural hybrid between O. Pescatorei and O. Lindleyanum. One of the multitudinous forms of O. × Andersonianum. The Dendrobiums sent form a very beautiful series, and comprise D. nobile nobilius, flower 4 inches across; D. n. Sanderianum, a smaller brightly-coloured variety; the chaste D. nobile albiflorum; D. n. Cooksoni, the two petals lip-like; D. Wardianum album; the beautiful D. × Venus, D. × Ainsworthii, and D. × A. roseum; D. × Leechianum, very fine; and D. × splendidissimum Leeanum, which is more like D. nobile than the original form.

W. M. A., Weston-super-Mare. Catasetum Œrstedii.

C. Eastwick-Field, Esq., Midhurst, Sussex, sends Vanda Amesiana with two flowers fused together, a peculiarity occasionally met with in various Orchids. Also a peculiar dark form of Cypripedium insigne.

G. Roberts, Arddarroch. Apparently Cypripedium × Ledouxiæ (*Orchid Review*, I. p. 117), which also was supposed to be derived from C. callosum and C. × Harrisianum.

De Barri Crawshay, Sevenoaks, sends Lycaste mesochlœna with a two-flowered scape, which is certainly unusual. Also a good Odontoglossum × Andersonianum and two brightly-coloured forms of O. × Ruckerianum.

Cypripedium × Mrs. Canham, sent by R. Young, Esq., Sefton Park, Liverpool, shows a peculiar elongation of the tip of the pouch. The other is like a large C. × Harrisianum superbum, and is very fine.

H. A. B., Highbury. Dendrobium nobile, white variety, with small rosy tips, not quite var. albiflorum. D. superbum, darker than usual; has probably no special name. The beautiful Lælia × flammea is also enclosed.

J. Dale, Aikenhead, Cathcart, N.B., sends the flower of a seedling Cypripedium raised there "from the same parentage as C. × Amesianum," to which it clearly belongs. In the petals it much resembles C. villosum, while the dorsal sepal is nearer C. venustum, with a brown stain at the base. The combination is very pretty. A good Odontoglossum Rossii majus is also enclosed.

H. J. R., Florence. Cypripedium, next month.

We have received remittances, both from Belgium and Germany, without any clue to the senders. Will those who have not received acknowledgments please communicate with us?

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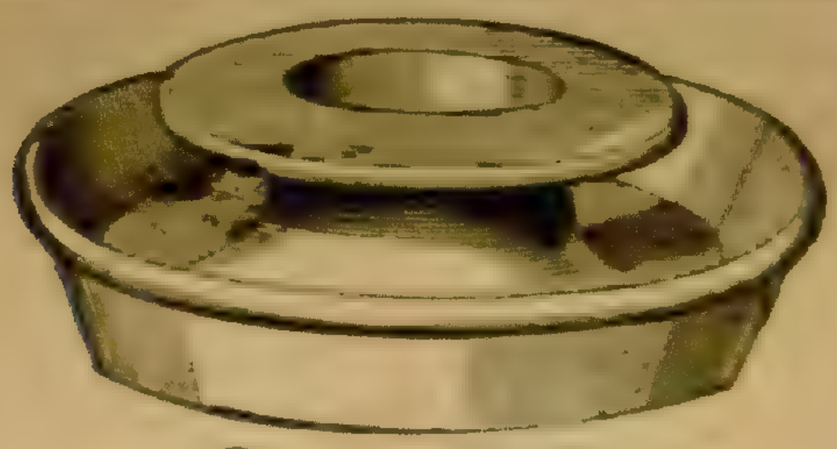

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VOL. II.] APRIL, 1894. [No. 16.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	97
Cypripedium insigne Sanderæ ...	98
Cypripedium insigne Bohnhofianum...	98
Dies Orchidianæ	99
The Cambridge Lodge Collection ...	102
Phalænopsis × F. L. Ames	106
Novelties	107
Lycaste Skinneri alba	107
Notices of Books	108
The Hybridist	110
Selenipedium × Stella	110
Cypripedium × calloso-Argus ...	110
Cypripedium × Echo, etc.	111
Lælio-cattleya × Hon. Mrs. Astor...	111
Odontoglossum × excellens var. Harvengtense	112
Dendrobium euosmum and its varieties	112
A Group of Dendrobiums	113
Dendrobium × Rolfeæ (Fig. 9) ...	113
A Group of Dendrobiums (*continued*)— Dendrobium × Rolfeæ roseum (Fig. 10)	114
Dendrobium nobile (Fig. 11)	114
Dendrobium nobile albiflora (Fig. 12)	115
Dendrobium nobile nobilius (Fig. 13)	115
Dendrobium nobile Sanderianum (Fig. 14)	115
Dendrobium nobile Cooksonianum (Fig. 15)	115
Odontoglossum × deltoglossum Stevensii	115
Orchid Hybridisation	116
Calendar of Operations for April ...	118
Orchid Portraits	122
Continental Notes	124
Orchids at the Royal Horticultural Society	125
Correspondence, etc.	128

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THE ORCHID REVIEW.

VOL. II.] *APRIL*, 1894. [No. 16.

NOTES.

THE remarkable Eulophiella Elisabethæ, we are able to announce, is now flowering with Messrs. F. Sander and Co., of St. Albans—probably for the first time in this country. We have just received a beautiful raceme, which shows the flowers to be over one and a half inches across, pure waxy white, tinged on the back of the segments with reddish pink, and the disc of the lip deep yellow, while the base of the lip and column are marked with deep orange. The raceme and bracts are deep reddish purple. It is suspended in a warm, moist house, and grows freely, and thus should become a popular favourite.

The meeting of the Royal Horticultural Society on March 13th was a highly successful one, and noteworthy on account of the award of a gold medal to the magnificent Odontoglossum crispum apiatum exhibited by Baron Schröder. A report appears on another page. The report of the meeting held on March 27th must stand over till next month.

Two meetings will be held during April, on the 10th and 24th respectively, when the Orchid Committee will meet at the usual hour. On the latter occasion the subject of the afternoon lecture is, "Botanical Exploration in Borneo," by Mr. F. W. Burbridge, M.A., which will doubtless contain interesting references to Orchids.

The Orchidéene of Brussels celebrated its fiftieth meeting on March 11th, when the members marked the occasion by a presentation and *déjeuner* to the founders and organisers of the Society, MM. Jean and Lucien Linden. It took the form of the *cartes-de-visite* of the members, seventy in number, arranged together and mounted in two large and handsome frames. The recipients were also presented on their arrival

with two superb bouquets of Orchids. The meeting was a very brilliant one, and the exhibits numbered one hundred and thirty-three, and W. Thompson, Esq., Stone, Staffordshire, was chosen president of the jury. Their labours over, the company retired to the Grand Hotel, where an elegant *déjeuner* was served. Suitable speeches followed and the healths of the gentlemen in whose honour the *fête* was held were proposed and suitably acknowledged.

Several species of Phalænopsis are splendidly grown at Henham Hall, Wangford, the seat of the Earl of Stradbroke, by Mr. Eden. A plant of P. Aphrodite last October produced a flower stem with several branches and about fifty fully expanded blooms, and now it has yielded a second spike of fifteen flowers, each over three and three-quarter inches in diameter, and of the greatest beauty.

M. Th. Durand, of Brussels, announces the preparation of a work entitled, *Census Orchidearum*, an enumeration of the various species, varieties and hybrids of this extensive family, with brief particulars respecting them.

CYPRIPEDIUM INSIGNE SANDERÆ.

One little mistake respecting this beautiful variety which has got into some of the books, and was reproduced in our account at page 41, deserves to be corrected. Mr. R. I. Measures is said to have paid to his brother one hundred guineas for half of the plant, but Mr. Measures informs us that it was obtained in exchange for other plants. We are also glad to learn that the plant in Mrs. F. L. Ames's collection is in thriving condition, and under Mr. Robinson's management increases twofold each year.

CYPRIPEDIUM INSIGNE BOHNHOFIANUM.

In reference to your note on the above at page 40, that nothing was stated in the original description about its origin, I may say that the omission was probably an oversight on Mr. O'Brien's part. The first appearance occurred in our nursery in November, 1891, among an importation of the popular "montanum" type, when its beauty and phenomenal appearance won the admiration of R. H. Measures, Esq., who secured half the plant, and it has since found a home among his numerous treasures at Streatham. The other portion still remains intact at St. Albans, and we have no knowledge of its equal excepting Mr. Measures' plant and the one mentioned in your February issue, both of which I have lately seen flowering with their respective owners.

A. Dimmock.

DIES ORCHIDIANÆ.

LAST month I called attention to the English Orchid-grower and his methods, as detailed by his Belgian compeer. Our French cousins have now received a little attention. Those collections which are formed under English influence, we learn, are generally in a very ordinary, not to say mediocre, condition. The plants resemble those grown in England, in a similar overheated and stuffy atmosphere. Those collections, on the contrary, which are established under the influence of the Belgian school are in a state of remarkable prosperity. And why this disparity? Because the Belgian uses open stages, which allows the fresh air to circulate freely among the pots, and opens the ventilators freely as often as the outside temperature permits. "Behold here all the great secret of the culture of cool Orchids." The remark is decidedly ingenious, considering that it has been practised in England before even a Belgian school was heard of, as such. Must I prove my assertion? When the external air is at 40° Fahr. air should be admitted; at 45° the amount should be increased; at 50° the bottom ventilators should be wide open and the top ones partially so; at 60° as much air as possible should be admitted; minimum temperature in winter 45°, maximum in hot weather, the lowest possible; avoid fire heat whenever possible. This is a condensed epitome of our hot stuffy treatment as applied in the best collections. And what is the result? A single example shall suffice. An Odontoglossum crispum flower measuring five inches across its broadest diameter, and the petals one and three-quarter inches broad. I may have occasion to recur again to the subject.

Where are we going? I observe in the *Gartenflora* two new Orchids, under the imposing names of Grammatophyllum Guilelmi II. and Dendrobium Augustæ Victoriæ. Shades of Linnæus! Is this thy immortal binomial system of nomenclature? By and by a variety will appear, which too must be distinguished. Fancy such a name as Grammatophyllum Guilelmi secundi variety Poggio Gherardo. And the thing is clearly not impossible. Some time ago a learned committee met to consider this nomenclature question, and after profound deliberation at many sittings recommended that names of Orchids should be given in accordance with botanical usage, but trivial varieties in the vernacular. If the above are specimens, I should say that simplicity is not a strong point in modern nomenclature. The same school has given to the world a Sirhookera—happily not an Orchid. Judging by recent developments, I should think a treatise on nomenclature must surely rival Mr. Pickwick's celebrated theory of Tittlebats.

A good deal of advice has at various times been given respecting the

culture of Phalænopsis, but the latest essay on that subject is perhaps the most startling which I have yet had the good or ill fortune to come across. Writing from the Java Botanical Gardens on the promising subject of "the Phalænopsis at home," Mr. W. T. Lefebre, in the *Gardeners' Chronicle*, remarks:—"I venture to think that in Europe a Cattleya house is not fit for Phalænopsis, that, for instance, an Odontoglossum house would do better, and that growing them under cooler conditions will ensure greater success." Can the writer be aware of the temperature of our Odontoglossum houses? The following notes are more to the purpose:—"In places where Phalænopsis grows abundantly, the temperature never exceeds 75° Fahr. in the daytime; it falls to 55° at night (Aug.). Most plants bloom from October till May, and some do not stop flowering at all during the dry months (in West Java damp weather prevails). The trunks to which their roots cling are amply mossed, the atmosphere being moist; one handful of that heterogeneous mass of rotten leaves, bark *débris*, &c., seems sufficient for a whole group of them. They are partially shaded for a few hours daily (in the morning); they bear sunshine very well. They seldom occur in the gloomy and moist forests, . . . but always in open places, often amidst thin-crowned single trees, which admit the full light, or in old coffee groves (a number of them were growing on the coffee trees themselves)." I believe these conditions are substantially in agreement with the practice of our most successful cultivators.

I further note that Phalænopsis grandiflora is said to have been "found first by Dr. Blume in Java, 2,000 feet above sea-level." Now I have always understood that it was known long before Blume's time, and on consulting the authorities my impressions are confirmed. Rumphius detected it in the island of Amboyna, and published an account of it in his *Herbarium Amboinense* as long ago as 1750, though under another name. And two years later Osbeck discovered it on New Island, at the western extremity of Java, and brought specimens home, which were forwarded to Linnæus, and described in his famous *Species Plantarum*, in 1753, as Epidendrum amabile. Osbeck was on his voyage home from China, and touching there, essayed to land in a boat, though the water was so full of corals that he had to be carried ashore by his people up to their breasts in water. On landing he was rewarded by finding this beautiful Orchid growing on the branches of trees on the shore. "The plant," he remarks, "hath great white odoriferous flowers such as I never observed before." Horsfield found it in 1809, at no great distance from the ocean, and even Blume met with it "in woods near the coast." His account was published in 1825, three-quarters of a century at least after its original discovery. Phalænopsis amabilis was the name adopted, the new genus commemorating its fancied resemblance to a

moth. It is said to grow in Java, Borneo, Celebes and the Moluccas, as far east as Timor laut, generally at low elevations not very far from the coast.

I should not counsel your readers to make experiments in the Odontoglossum house.

I read with much interest the chatty article on "Orchids" by Mr. W A. Styles, Editor of *Garden and Forest*, in *Scribner's Magazine* for February, but found my sense of gravity considerably upset by the detailed story of the discovery of Eulophiella Elisabethæ. How the Madagascar chief had dispatched his sister's husband with a royal retinue to guide and protect the collector from the dreaded Protocryptoferox madagascariensis, which lies in wait for his prey upon the branches of the trees in the dense woods where the Eulophiella grows; crouching among the great tufts of the Orchid, with its tall arching spikes of white and lurid purple flowers. How the husband of the princess was rent to death, and the collector had to face the dread alternative of death or matrimony, and promptly chose the latter, thinking it a more pleasant way of appeasing the spirit of the dead than being greased and burnt. How the truculent brother-in-law is now protecting a few little plants until the collector is ready for them. And, lastly, how the confiding editor of a great horticultural journal "sees no reason to doubt the veraciousness of the victim's narrative." Are they not all duly chronicled in the book of Scribner? What a subject it would have been for Mr. Paul de Longpré to have added this terrible Madagascar lion in his lair to the list of his charming illustrations! Of course it is the collector's story, though not told in all its grotesqueness. Poor little civet! was not thy name of Cryptoprocta ferox sufficiently terrible, that it must be thus garbled, and the number of letters exactly doubled, save one? I prefer not to subject the matter to further analysis. The method is unsuited to it, and the result might be disastrous.

The *Gardeners' Chronicle* would like to see a monograph of Orchids constructed on the plan of their leaf-structure, because of the evidence it affords as to the conditions of their suitable growth. But does it invariably afford such evidence? I have seen Orchids with widely different leaf-structure growing under identical conditions, and those with very similar structure under diverse ones. Nor am I sure that any peculiarity of that leaf-structure could be detected which would lead me to plant one species of Goodyera in the open air and another in the stove, were I ignorant of their natural habitats. Minute anatomy is doubtless interesting, but I fancy other facts will come more readily to the aid of the cultivator.

ARGUS.

THE CAMBRIDGE LODGE COLLECTION.

CAMBRIDGE LODGE, Flodden Road, Camberwell, is the residence of a very enthusiastic Orchidist, in the person of R. I. Measures, Esq., who has brought together an exceedingly rich and interesting collection. Few people would expect to find so fine a one within a short walk of Vauxhall Station at the present day. The terrors of London fog and the encroachments of the builder might be supposed to have long ago driven it further afield. But not only does it exist there; it thrives, or, what is more to the purpose, the plants do. They are healthy and vigorous, and afford evidence of the care and intelligence brought to bear on their cultivation by Mr. Measures' gardener, Mr. Henry Chapman, who has no light duty to perform. There are eighteen houses devoted to Orchids, being generally compact and well adapted to the requirements of the plants, of which there are about six thousand, exclusive of unflowered seedlings.

Cypripediums occupy the leading position, and number about sixteen hundred plants, including nearly all the cultivated species and the majority of the hybrids. They are not grown by themselves, except perhaps in two of the houses, though six others are largely or partly devoted to them, and thus the requirements of the different kinds are easily provided for. A considerable number are in flower at the present time, but our purpose is not so much to enumerate these as to say something about the collection generally.

In the two houses devoted exclusively to Cypripediums are many fine specimens, which have been grown on from small plants. Among them may be mentioned, C. × Harrisianum with over 100 growths, C. × œnanthum with 60, C. × œnanthum superbum with 50, C. × vexillarium and C. × Leeanum superbum with 30 each, C. × orphanum with 26, C. × marmorophyllum, C. × Charles Canham, C. × Morganiæ, and C. × euryandrum, of somewhat smaller size, three plants of C. × Winnianum with 10 to 14 growths each, and many others of smaller dimensions. Among rarities we note, C. Mastersianum, C. × tessellatum porphyreum, and C. Lawrenceanum Hyeanum showing for flower; also plants of C. × Greyanum, C. × microchilum, and C. × fascinator.

Selenipediums are equally well represented, and comprise S. × cardinale, and its more brightly coloured variety rubicundum, each with 50 growths, S. × albopurpureum with 40, S. × leucorrhodum with 33, S. Klotzschianum with 20, and two plants of S. × Schrœderæ with 12 and 15 each. Also two fine specimens of S. × Sedeni candidulum in No. 1 pots; S. × Lindleyanum with a fine flower-spike of ten flowers and buds; together with many large plants of the common species, and smaller ones of the rarer hybrids. In fact, Mr. Measures, in July, 1888, issued a neat little catalogue of the species, varieties and hybrids of Cypripedium in his collection, number-

ing upwards of three hundred, and now his MSS. additions indicate an extensive addition to the list.

In the third house we observed a healthy batch of about three hundred plants of Miltonia vexillaria; Cymbidium Devonianum, two plants showing for flower; Pleurothallis Roezlii bearing an eight-flowered raceme of large vinous-purple flowers; the rare Dendrobium senile, remarkable in having its pseudobulbs covered with long woolly hairs; a very fine plant of Oncidium ornithorhynchum album; the beautiful C. insigne Sanderæ and C. i. Ernesti; C. × Arthurianum with 25 growths; the yellow C. venustum Measuresianum, remarkable not only for the absence of purple from the flower, but also from the underside of the leaves; Selenipedium caricinum with 40 growths; and various other interesting Orchids.

Masdevallia is a genus in which Mr. Measures takes a special interest. A catalogue issued in June, 1890, uniform with that of Cypripedium, shows that it contains most of the species, varieties, and hybrids in cultivation. A few pages at the end are devoted to Pleurothallis and Restrepia, and show that some forty species of the former and eleven of the latter are in the collection. The next house visited is a cool one, and contains most of the smaller Masdevallias, for the Saccolabiate section and the scarlet-flowered group are elsewhere. Among the rarities we note, M. O'Brieniana, allied to M. simula, but with broader leaves and larger flowers; M. elephanticeps, M. torta, M. Arminii, Mr. cupularis, M. Mooreana, M. × Courtauldiana and M. × Hincksiana, the latter flowering almost throughout the year, and as the flowers open deep buff and fade to cream or nearly white, it looks as if two plants were mixed in the same clump. Odontoglossums grande and Harryanum are also grown here.

The next is a small house containing Lælia anceps, Cœlogyne barbata and Cypripedium insigne, whence we pass into another chiefly devoted to C. villosum, Boxallii, insigne and the cooler hybrids. Here are C. × nitens and its varieties Sallieri, Celeus, and others, C. × Godseffianum, many plants of C. Boxallii and C. villosum in flower, including a richly-coloured C. v. aureum. Hanging from the roof are fine plants of Masdevallia Chimæra and its varieties and allies, in robust health, a splendid clump of the remarkable M. muscosa with two hundred leaves; also Pleurothallis Grobyi, and the singular P. ornata, with three spikes.

The large Cattleya house contains some two hundred plants of Cattleya labiata, a fine lot of C. Trianæ and its varieties, with fifty flowers open, among which C. T. Ernesti is conspicuous; also C. Mossiæ, C. Mendelii and C. Warscewiczii (gigas) in variety, together with various other species and varieties. Cattleya citrina crossed with Lælia purpurata has developed a fine capsule, while the same species fertilised with C. Schrœderæ and the reversed cross were both equally promising, and we hope that seedlings will be obtained.

The next house contains a miscellaneous collection, including Cœlogyne tomentosa with 50 bulbs; three enormous plants of C. Massangeana, the largest with 120 bulbs; C. pandurata; several C. Dayana; a batch of Miltonia Roezlii, and numerous plants of Cypripedium Victoria-Mariæ and C. exul. It is interesting to note that the latter species, as well as C. bellatulum and C. × Arthurianum, have all been crossed with the beautiful yellow C. insigne Sanderæ.

The Lælia house contains a fine batch of L. purpurata and other species, also the natural hybrids Lælio-cattleya × elegans and L.-c. × Schilleriana, and a large batch of Cattleya Lawrenceana, in robust health. Cypripedium niveum and its allies, C. concolor, bellatulum, and Godefroyæ are grown in quantity on the shelves, in a compost composed of broken limestone and fibrous peat, in which they evidently luxuriate. There are also three very large plants of Selenipedium × calurum in No 1 pots.

In the Lycaste house may be seen a large batch of L. Skinneri, including eight plants of L. S. alba, together with various other species; Bifrenaria Harrisoniæ and Epidendrum vitellinum; while suspended from the roof is a very large plant of Cœlogyne cristata alba, on a raft three feet square.

The next house contains Cypripedium barbatum and its allies which like more heat; also C. Sanderianum, some plants of C. exul, and C. Rothschildianum, with 10 to 14 growths, six of them showing flower. One plant shows the somewhat curious phenomenon of having the lowermost bracts coloured precisely like the sepals. Among plants of C. Stonei was a fine one with 30 growths; also a large Selenipedium caudatum, and various kinds of Phalænopsis.

The Dendrobium house contains a variety of the leading kinds, D. nobile and some of the hybrids from it being in flower and bud. A good plant of D. nobile Cooksoni with 36 bulbs and 20 flowers is very effective, also D. n. Sanderianum and D. × Ainsworthii, D. Farmeri with 60 bulbs, D. densiflorum with 70 to 80, and the chaste D. Dearei with 30, are also noteworthy.

The Cymbidium house contains large specimens of C. Lowianum and its yellow variety concolor, C. grandiflorum, and several plants of C. eburneum, coming into flower. Suspended from the roof are some large specimens of Masdevallia Chimæra and its varieties, also M. bella with 250 leaves, M. leontoglossa with 100, M. gargantua with 40, also the rare M. Lowii. A cross has been effected between M. leontoglossa and Pleurothallis Roezlii which may yield some curious results.

The two next houses are chiefly devoted to Aërides and Vanda. V. tricolor and V. suavis are present in variety, and several of them finely in flower. Some time ago the plants were very leggy and had reached the glass, but Mr. Chapman boldly cut them down and repotted them, with

the happiest result, as they are now furnished with leaves down to the pots and apparently as healthy as if they had not been touched. A large plant of Stauropsis lissochiloides is throwing up a spike; Aërides expansum Leoniæ shows 26 growths, and Vanda Denisoniana is represented by a good plant. In short, both genera are represented by many fine plants in robust health. This house also contains a large plant of Lælia superbiens, which is bearing a spike five feet long with nine large and handsome flowers.

The Masdevallia house proper contains a large collection of plants in the most robust health, as is proved by their vigorous growth and deep green colour. The house is a lean-to, with the most ample provision for ventilation, which is utilised to the fullest extent whenever the weather permits. During the winter a temperature of 50° is maintained as nearly as possible, with a minimum of 45° in extreme weather; but Mr. Chapman considers that so low a temperature, except for a very short period, is very risky unless the plants are comparatively dry. Great care should be exercised in watering during the winter, but even then they should not be allowed to become dry. During warm weather the temperature is kept as low as possible by every available means. The result is excellent, as the plants are healthy and vigorous, and will doubtless flower freely when the proper season arrives. A plant of M. ignea was already pushing up well, and a large M. racemosa with 80 leaves is one of the healthiest we have ever seen. M. Harryana in its numerous varieties is represented in quantity, as also is M. ignea. M. Carderi has 70 leaves, M. gemmata 100, M. × Measuresiana 50, and M. irrorata 60. But it is unnecessary to prolong the list. The unique Pleurothallis punctulata, with its remarkable glaucous leaves, has 18 growths, while Restrepias and Scaphosepalums are represented in variety.

The Odontoglossum house contains a thousand plants, and many good varieties. Among those in flower may be mentioned a very fine O. triumphans, and several forms of the O. × Andersonianum group.

The last house is used as a resting house, and Mexican house in summer, and may thus be briefly be dismissed, as but little space remains for the hybrids, which form one of the most interesting features of the collection.

Hybridising is carried on to such an extent that it is difficult to know where to begin. Perhaps some idea may be formed by the fact that already during the present year Mr. Chapman has sown the contents of 36 capsules, and has 60 more waiting their turn. Those which mature during the winter months are stored up in paper until the return of more genial weather, because the risk of loss is considered to be diminished by this means.

To enumerate the crosses already made would be a formidable task

but they are carefully recorded in a book, so that the information may be available when they come to flower. A few interesting ones may be mentioned as a sample: Cypripedium Lawrenceanum crossed with Parishii, which will probably flower before long; C. ciliolare × bellatulum, and the reverse; C. villosum × bellatulum, and the reverse; C. superbiens × bellatulum, and the reverse; C. Curtisii × bellatulum, and the reverse; C. Boxallii atratum × bellatulum; C. callosum × bellatulum; C. bellatulum × Mastersianum; C. Curtisii × Chamberlainianum, and the reverse; C. Curtisii × Rothschildianum; and C. Rothschildianum crossed with Selenipedium × leucorrhodum. The last-named cross deserves a passing mention. It is only one of a series made between the two genera Cypripedium and Selenipedium, though hitherto without any practical results, for while numerous capsules have been obtained, no seed has ever yet been induced to germinate.

A large number of seedlings are gradually progressing towards maturity; some have already flowered, and a considerable number of others will probably arrive at this stage within the next year or two. It is hardly necessary to add that some interesting novelties may be anticipated.

There is a genuine pleasure in going through this interesting collection, where all the work seems to be undertaken systematically. Besides the ordinary label, each pot or basket has a small leaden one, on which a number is punched, while the particulars are entered in a book under the corresponding number, and can thus be consulted with the utmost facility.

Mr. Measures has also water-colour drawings of many of his favourites, more particularly of Cypripedium and Masdevallia, which are available for reference and comparison when the plants are not in flower. He has also a small duplicate collection contained in five houses at his country residence in Hampshire. May the day be far distant when the remainder of the collection has to follow them!

PHALÆNOPSIS × F. L. AMES.

This is a very charming and distinct hybrid which flowered in 1888 with Messrs. James Veitch and Sons, of Chelsea, from whom we have now received a raceme. It was obtained by crossing the Malayan P. amabilis (Blume) with the pollen of P. × intermedia, itself a natural hybrid between P. Aphrodite and P. rosea, from the Philippines. The flowers are about intermediate in shape and size, the sepals and petals white, but the lip suffused and marked with a peculiar shade of reddish purple, which affords a very effective contrast. The tendrils are well developed. The peculiar colour of the lip is quite distinct from that of any other, and renders it an interesting addition to the group. It was dedicated to the late Mr. F. L. Ames, of North Easton, Mass., U.S.A.

NOVELTIES.

CŒLOGYNE CRISTATA, WOODLANDS VARIETY.—Another variety of the beautiful Cœlogyne cristata has appeared, this time in the collection of R. H. Measures, Esq., The Woodlands, Streatham. It has the shape and size of C. c. Lemoniana, but the disc, instead of being citron yellow, is very pale primrose. Compared side by side the two are very distinct in the character pointed out. It is very beautiful, and adds variety to the forms of this useful garden Orchid. We have seen nothing like it before.

LÆLIO-CATTLEYA × PITTIANA.—A natural hybrid imported by Messrs. F. Sander and Co., of St. Albans, it is said, from the neighbourhood of Pernambuco. It is compared with Lælio-cattleya × Schilleriana, and the parents are conjectured to be Cattleya guttata Prinzii (*i.e.*, C. amethystoglossa) and Lælia grandis—neither of which, by the way, grow at Pernambuco. The pseudobulbs are diphyllous; the raceme three to five-flowered; the flowers are four inches in diameter; the sepals and petals creamy-white, tinged with rose and having a few minute dots of crimson; and the lip nearly entire, the front lobe and tips of the side-lobes rich amethyst-purple, and the rest nearly white. The figure shows much resemblance to Lælio-cattleya × albanense in shape, but the two-leaved pseudobulbs show that it cannot be a variety of it. We should suggest that it came from Bahia.—O'Brien in *Gard. Chron.*, March 3rd, pp. 264, 265, fig. 27.

GRAMMATOPHYLLUM GUILELMI II., Kränzl.—A new Guinea species allied to G. Fenzlianum, Rchb. f., but larger, the racemes over a yard long and bearing from twenty to thirty-five flowers about three inches in diameter. It was introduced by Messrs. F. Sander and Co., St. Albans, through their collector Micholitz.—*Gartenflora*, March 1st, p. 114.

DENDROBIUM AUGUSTÆ VICTORIÆ, Kränzl.—A species with the same origin as the preceding, which has flowered in the collection of Herr Karnbach, of Berlin. It belongs to the section Antennata, and is allied to D. Mirbelianum, Gaud., and D. Albertisii, Rchb. f. The sepals are white, the petals pale yellow, veined with purple, and the tip rose-purple. The raceme is long and many-flowered.—*Gartenflora*, March 1st, p. 115.

LYCASTE SKINNERI ALBA.

In the March number of THE ORCHID REVIEW (p. 64), a correspondent inquires as to my method of growing Lycaste Skinneri alba. Let me say at once that if any credit attaches to my successful cultivation of this

Orchid, it rightly belongs to my gardener, Mr. Thomas Poyntz, who has had sole charge of my houses for the past eight years.

The plant referred to is grown in a teak basket, 15 inches by 10 inches, which seems to suit it admirably. During the summer months, and while it is making its new growths, it is suspended in the Odontoglossum house, a structure which is completely shaded by my residence for the whole of the day except the early morning. It is afterwards removed to the Mexican house, where the Lælias, such as anceps, autumnalis, &c., are grown, and here it is allowed to complete the formation of its bulbs, to throw up its spikes, and to flower.

No artificial manure of any kind has ever been used, and it has had to gain sustenance solely from the compost of good fibrous peat and sphagnum moss in which it is placed, and from rain-water, air, and light. It appears to me that the removal of the plant from one house to the other at the period stated contributes largely to its well doing, the shade and moisture of the Odontoglossum house helping its early growth, while the drier air and greater light obtainable in the Mexican house ripens up the bulbs and ensures longer flower stems than if kept to the cool house altogether. I do not say that some slight stimulant in the way of manure might not induce it to flower more freely, but personally I prefer to let well alone.

REGINALD YOUNG.

Fringilla, Sefton Park, Liverpool.

NOTICES OF BOOKS.

About Orchids: A Chat. By FREDERICK BOYLE. Chapman and Hall, Ltd., London, 1893.

This work, as the author tells us, consists of a series of collected articles, which have appeared in various periodicals—*The Standard*, *Saturday Review*, *St. James's Gazette*, *National Review*, and *Longman's Magazine*—brought up to date by additions, especially about hybridising. The essays are nine in number, and "profess to be no more than chat of a literary man about Orchids." They are written in fascinating style, and the reader who commences the book will not improbably be loth to lay it down again before reaching the last cover. Eight charming little chromo-lithographs, reduced from the pages of *Reichenbachia*, also embellish the work.

The essays include such subjects as—My Gardening—An Orchid Sale—Orchids, Cool, Warm, and Hot—The Lost Orchid—An Orchid Farm—Orchids and Hybridising—together with a short preface. From the latter we gather that the author's object is to popularise Orchid growing. "Savants and professionals," he tells us, "have kept the delights of Orchidology all to themselves as yet. They smother them in scientific

treatises, or commit them to dry earth burial in gardening books. Very few outsiders suspect that any amusement could be found therein. Orchids are environed by mystery, pierced now and again by a brief announcement that something with an incredible name has been sold for a fabulous number of guineas; which passing glimpse into an unknown world makes it more legendary than before. It is high time such noxious superstitions were dispersed."

And to disperse them the author proceeds forthwith. "It is astonishing to me," he observes, "that so few people grow Orchids. Every modern book on gardening tells how five hundred varieties at least, the freest to flower, and assuredly as beautiful as any, may be cultivated without heat for seven or eight months of the year." A little later we are told that "the cool house, in general, requires a fire at night until June 1." Here the average outsider will certainly call a halt, while the novice may even call in the aid of the local expert with a character to lose.

We would refrain from looking at a book of this kind too critically, though the author's remark that "hardly a statement needs correction" is, to say the least, superfluous. Of Odontoglossum we learn that "no one in England has raised a plant from seed—that we may venture to say definitely." And yet the fact has been recorded over and over again that in June, 1890, Messrs. Veitch flowered Odontoglossum × excellens raised from hybrid seeds obtained in their establishment. And Messrs. Heath have since performed the same feat. The legend that the Cattleya labiata sent home by Gardner was C. l. Warneri is equally wide of the mark, and Mr. Boyle might easily have satisfied himself that Warneri flowered for the first time in England just twenty-two years later. Numerous other cases could be pointed out, but we refrain. Mr. Boyle writes as an enthusiast, and is sometimes led away. Many Orchids are easily grown if treated aright, but attention they must have, or they will not prove more satisfactory than other plants. And the novice will soon discover that every "bit of glass" is not necessarily an Orchid House.

The Amateur Orchid Cultivator's Guide Book. By H. A. Burberry, F.R.H.S. Blake and McKenzie, Liverpool, 1894.

This is a most useful little work, which we commend to all who contemplate growing Orchids. Its purpose is to give "in plain words, easily understood instructions on important points belonging to every-day work" in the culture of Orchids. It is a book for beginners, though many who are more or less experts will find numerous useful facts in its pages. It treats of heating, ventilation, shading, watering, potting, diseases and insect enemies, treatment of imported Orchids, seedlings—in fact, almost every conceivable subject on which the grower requires information, and in very

handy form. Even such a subject as stoking the fires is not neglected. The different houses necessary, their structure and position, with the varieties suitable for each, are treated in detail ; besides which we find a Calendar of Operations for every month of the year.

The illustrations, which are reproduced from photographs, are of a novel and very useful character. They include—Cattleya and Odontoglossum, as imported, and after being potted, with a section showing the method of drainage—Dendrobium and Cypripedium potted, the former also in pan and basket—A Model Orchid house, with outlines—Section of Boilers and arrangements for shading. The charge brought against some of the text-books that they are written for the initiated does not at all events apply to this one. We recommend it to our readers with the utmost confidence. The condition of the splendid collection under Mr. Burberry's charge is ample guarantee of the soundness of the advice given. One or two slight details of nomenclature we should like to see amended in a future edition. It forms a suitable pendant to the preceding work, and those who are induced to commence the cultivation of Orchids should first master the details of this useful little book.

THE HYBRIDIST.

Selenipedium × Stella.

The rare Selenipedium vittatum has been pressed into the service of the hybridist, as Messrs. F. Sander and Co., of St. Albans, have recently flowered a very pretty seedling derived from this species and S. Schlimii, the latter being the seed parent. The sepals and petals are light rose colour behind, and light blush in front, with some darker spots near the base of the petals. The lip is light rose in front with darker veins, much paler behind, and round the orifice light yellow densely spotted with brown. The staminode is nearly semicircular, pubescent, and blush white with rose-coloured apex. It approaches S. × Sedeni in shape, but has rather smaller flowers and shorter segments, and is notably different in the yellow spotted with brown at the orifice of the lip. It is a very interesting addition to the genus.

Cypripedium × calloso-Argus.

A hybrid derived from C. Argus ♀ and C. callosum ♂, which has flowered in the collection of H. Graves, Esq., Orange, New Jersey, U.S.A. The flower is most like C. callosum in shape ; the dorsal sepal white with bright green veins; the petals deflexed, nearly three inches long, bright green flushed with vinous purple near the apex, and studded with blackish purple callosities on the superior margin, the lip vinous brown, with the infolded side-lobes yellowish and spotted with brown, and the staminode translucent and reticulated with green. The leaves have the markings of C. Argus.

Cypripedium × Echo.

This is a very handsome dwarf-growing hybrid raised from Cypripedium Hookeræ ♀ and C. insigne ♂, in the same collection as the preceding. The leaves are greenish white, netted with light green, and about three inches long by one and a half broad; flower scape one foot high, brown, with purplish hairs, flower three and a half inches across; dorsal sepal oval, mucronate, apical third greenish white, remainder pale green with a few purple dots near the base, the whole beautifully tinged with rose-violet; petals very broadly spathulate, rose-violet shading to green at the base, and faintly dotted with violet, ciliate on the margins; lip shining, rich brown with darker veining, paler beneath, infolded side-lobes pale yellow with purple dots, ciliate on the margin of aperture; staminode semi-orbicular, hirsute, primrose yellow.

Cypripedium × Behrensianum.

A very pretty hybrid raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from C. Boxallii ♀ and C. × Io grande ♂. It might almost be described as C. Boxallii with the petals narrowed and covered with large dark purple-brown spots almost to the apex, and the staminode approaching that of C. Lawrenceanum in shape. These modifications are due to the influence of C. Lawrenceanum and C. Argus, the parents of C. × Io grande. The spots on the petals come chiefly from C. Argus, while their shape, as well as that of the staminode, is due to the combined influence of this species and C. Lawrenceanum. A small green tubercle on the staminode, the shape and colour of the dorsal sepal, and the details of the lip show the influence of C. Boxallii.

Cypripedium × Pandora.

A charming hybrid raised by M. Anton Joly, from C. Argus and C. Dayanum, the latter presumably the pollen parent. It most resembles the former, but the dorsal sepal has more white on the margin, and the petals more spreading, and the lip somewhat approaches C. Dayanum.—Kränzlin in *Gard. Chron.*, Feb. 24th, p. 230.

Lælio-cattleya × Hon. Mrs. Astor.

A handsome hybrid raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from Cattleya Gaskelliana ♀ and Lælia xanthina ♂. In shape it most resembles the former, though the colour is more like that of L. xanthina. The sepals are clear light yellow, the petals white tinged with sulphur, and the front part of the lip bright rose-purple with lilac margin and the throat streaked with purple and yellow. It flowered when five and a half years old.—O'Brien in *Gard. Chron.*, Feb. 24th, pp. 230, 231, Fig. 24.

Lælio-cattleya × Doris.—In the description of this handsome hybrid at p. 79 it was inadvertently stated that Lælia cinnabarina was the seed parent. The allied L. harpophylla should have been given.

CYPRIPEDIUM × MULUS.—By an oversight we omitted to state the origin of this hybrid when describing it at page 244 of our last volume. It was raised by Mr. Maynard in the establishment of Messrs. F. Sander and Co., of St. Albans.

ODONTOGLOSSUM × EXCELLENS VAR. HARVENGTENSE.

This is the beautiful Odontoglossum for which M. le Comte de Bousies received a First-class Diploma of Honour at the meeting of the Orchidéene of Brussels, on February 11th last, and which has been mentioned in various reports as a natural hybrid between O. crispum and O. sceptrum. Through the kindness of M. A. A. Peeters, of Brussels, I have seen the inflorescence, and find that the plant is a fine variety of O. × excellens, a hybrid between O. Pescatorei and O. triumphans. Shape, colour, column wings and crest of lip are absolutely in agreement, and quite different from those of O. × Wilckeanum, of which the first-named parentage would have made it a variety. The inflorescence is very fine, and the largest flower measures three and a half inches across its longest diameter, while the petals are fourteen lines broad, and the lip and dorsal sepal ten lines. I have seen a form of this hybrid with longer segments, though they were narrower, having more of the shape of O. triumphans. The flower has a very light yellow ground with many minute light cinnamon spots on the petals and larger ones on the sepals and lip. It is not so heavily spotted as the O. × excellens dellense in Baron Schröder's collection.

R. A. ROLFE.

DENDROBIUM × EUOSMUM AND ITS VARIETIES.

A series of forms of this beautiful hybrid has reached us from Messrs. James Veitch and Sons, of Chelsea. It will perhaps be remembered that it was originally obtained by crossing Dendrobium × endocharis (D. japonicum × aureum) with the pollen of D. nobile, and that the name is given in allusion to its fragrant flowers. The flowers are white with a medium-sized maroon-purple disc, and each segment lightly flushed with pale, rosy purple. The variety leucopterum is larger and of the purest white, except the disc, which is a little paler than in the original form. Another pure white form has been called variety virginale, and chiefly differs in having rather narrower and more acute sepals and petals. The variety roseum is a beautiful rose-coloured form, but is remarkably like D. × Dominianum (D. nobile × Linawianum), and we cannot avoid a suspicion that it is a stray seedling from that cross. If not the resemblance is very remarkable. D. × euosmum and its varieties are very floriferous and beautiful.

A GROUP OF DENDROBIUMS.

THE Dendrobiums here illustrated form a very interesting group, and represent some of the variations to which the beautiful D. nobile is subject, together with a garden hybrid raised between it and D. primulinum, and a supposed natural hybrid of the same origin. The second parent is not represented, for the simple reason that we were unable to obtain a fresh flower of it when the photograph was made. The figures are about half natural size.

Fig. 9. DENDROBIUM × ROLFEÆ. Fig. 10. D. × ROLFEÆ VAR. ROSEUM (*see* p. 114).
Fig. 11. D. NOBILE (*see* p. 114). Fig. 12. D. N. ALBIFLORUM (*see* p. 115).
Fig. 13. D. N. NOBILIUS (*see* p. 115). Fig. 14. D. N. SANDERIANUM (*see* p. 115).
Fig. 15. D. N. COOKSONIANUM (*see* p. 115).

DENDROBIUM × ROLFEÆ (Fig. 9) was raised by Messrs. F. Sander and Co., of St. Albans, from D. primulinum ♀ and D. nobile ♂, and was described two years ago (*Gard. Chron.*, 1892, i. p. 522), on the occasion of its flowering for the first time. It was described as being much like the pollen parent, both in habit and in the general shape of the flower; the sepals delicate blush, a little darker at the tips, but white at the base; the petals white with rosy

purple tips, and the lip sulphur-yellow and white tipped with bright rose. As in the case of the seed parent, the deep maroon blotch is absent; but close to the base, on either side of the pinkish white fleshy disc, are a number of radiating deep maroon lines, just where some lighter streaks occur in D. primulinum. With the exception of colour these characters are well shown in our figure. This flower was taken from a plant from the same batch of seedlings, kindly sent by Messrs. Sander, but it is not equal to the original form, now in the collection of W. R. Lee, Esq., of Audenshaw, Manchester, having both smaller flowers and narrower petals. Whether the difference is permanent we cannot say. It is surprising how small is the resemblance which this hybrid bears to the seed parent, the only obvious character being the absence of the maroon disc. We may point out that the dark throat of the lip seen in our figure arises from shade, this being one of the drawbacks of the photographic process, though it is more than compensated for by superior accuracy in other respects. D. × Rolfeæ is as free growing and floriferous as D. nobile, and is a very charming plant.

D. × ROLFEÆ VAR. ROSEUM.—Fig. 10 represents a very interesting plant from the collection of Major-General E. S. Berkeley, of Bitterne Park, Southampton, who informs us that it appeared among some imported D. nobile sold by Messrs. Protheroe and Morris about three years ago. It was a tiny little piece, but produced a flower on the imported stem, and though weak it was at once seen to be very distinct, and probably a natural hybrid. It has now developed into a respectable plant. Like the preceding, it has no maroon blotch on the lip, while the radiating lines near the base are also very similar, and the habit quite that of D. nobile. It shows such a substantial agreement in character with D. × Rolfeæ as to leave little doubt of its being a natural hybrid derived from the same two species, which are known to grow together in Sikkim. The present form is considerably brighter in colour than the original, and, as the figure shows, is also more like D. nobile in the shape of the lip. The segments would appear to be less spreading, but this is partly due to the fact that the flower was scarcely as fresh when photographed. It is a very beautiful variety, and owing to its brighter colour may bear the name of variety roseum. Before the preceding was known it might perhaps have passed as a variety of D. nobile.

DENDROBIUM NOBILE is represented in Fig. 11—a good well-shaped flower, though not quite identical with the original Chinese form. The fact is this species is excessively variable, and we have received from Messrs. Sander at least a score of forms from recent importations, no two of which are alike. One of them is here represented. The remaining four varieties figured are from the collection of W. Thompson, Esq., Walton Grange, Stone, Staffordshire, kindly sent by Mr. W. Stevens, gardener, with a few of the more typical forms.

D. N. ALBIFLORUM (Fig. 12) is pure white with the exception of the deep maroon disc, and is invariably smaller than most other forms, even when grown under the same conditions. It has long been known, though we have failed to trace its exact origin. A much larger white form, which appeared last year with Messrs. F. Sander and Co., of St. Albans, is known as D. n. Amesiæ.

D. N. NOBILIUS (Fig. 13) is the largest and most richly coloured form which has yet appeared. It was originally purchased by Mr. James, of the Castle Nursery, Lower Norwood, at one of Stevens' sales, nearly twenty years ago, and was afterwards acquired by Messrs. Rollisson, who exhibited it at the Ghent Quinquennial Exhibition, in 1878, though it suffered so severely by frost during transmission that it was nearly lost. All the plants in cultivation have been propagated from the original one. The flowers are four inches in diameter across the petals, which latter are an inch broad. The segments are more spreading than shown in the figure, but the flower had lost a little of its rigidity when photographed, as in the case of Fig. 10.

D. NOBILE SANDERIANUM (Fig. 14) is smaller and not quite so dark in colour as the preceding, but is a very handsome form. It appeared with Messrs. F. Sander and Co., of St. Albans, a few years ago.

D. NOBILE COOKSONIANUM (Fig. 15) is a curious sport, which was first observed in the collection of Mr. Theodore Lange, Heathfield House, Gateshead, but afterwards passed into the collection of N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne. The petals bear a deep maroon blotch at the base, and thus show a tendency to become metamorphosed into lips. Curiously enough, the sport has since independently appeared in two other collections.

Several other varieties of this beautiful and popular Dendrobium have received distinctive names, among which D. n. Ballianum is one of the most distinct. Some flowers received were, unfortunately, not fresh enough to be included in the group. The maroon blotch is replaced by a soft pink area of the same size; round this is a pale sulphur-white area, while the tip is flushed with blush pink. The sepals and petals are tipped with the same colour, but blush white below. It is a very charming form.

ODONTOGLOSSUM × DELTOGLOSSUM STEVENSII.

This is a very striking variety of Odontoglossum × deltoglossum from the collection of W. Thompson, Esq., Walton, Stone, Staffordshire (gr. Mr. W. Stevens). The panicle bears three basal branches, and altogether carries over thirty flowers. The ground colour is light yellow, and the sepals each bear several large red-brown spots, in a few cases aggregated into two broad bands, while the petals are nearly unmarked. A few bear

two or three small spots, and there are generally one or two narrow lines at the extreme base. The lip is yellow, with a large red-brown blotch near the tip, and has the usual deltoid shape. The strong contrast between the sepals and petals gives it a very bizarre and elegant appearance. It is dedicated to Mr. Stevens.

R. A. R.

ORCHID HYBRIDISATION.

(*Continued from page* 85.)

LAST month we left our hybridist warring with slugs and thrips, and generally striving to safeguard his fondlings against the adverse circumstances which oppose their progress from infancy to maturity, in which we may hope he has been successful. And the next question is, How long must he wait before reaping the fruits of his labour? This depends largely upon circumstances. It may be as little as two or as much as nineteen years, though both extremes are exceptional. Calanthe × Dominii, the first hybrid which reached the flowering stage, was only two years old when that event took place, and now Disa × Veitchii and D. × kewensis have successively broken the record by flowering in twenty-one and eighteen months respectively, from the time the seed was sown. Cypripedium × Arnoldianum, too, flowered when under two years old.

It may be interesting to give a few particulars under this head. Disa evidently heads the list, and Calanthe probably comes next, as the average period of reaching maturity is from three to four years. Cypripedium, Selenipedium, and Dendrobium, follow closely, then Masdevallia, Chysis, and Phaius crossed with Calanthe, about four to five years. Zygopetalum and Lycaste require rather longer to reach the flowering stage, and last of all comes Cattleya and Lælia and the various crosses between them, for which seven to ten years is perhaps about the average, with four years as a minimum and nineteen as a maximum period.

A few more exact details will further illustrate this point. Calanthe Alexandri flowered within three years, and one or two other cases of equally rapid development are on record for the genus. Cypripedium × Juno flowered in three years and eight months after the seed was sown, and Dendrobium × Cybele in six years. Selenipedium Schlimii crossed with S. longifolium flowered in four years, according to Mr. Veitch, while the reverse cross required six. Zygopetalum maxillare crossed with Z. Mackayi (by the way was not this Z. intermedium ?) flowered in six years, but the reverse cross in nine. Cattleya × William Murray flowered when four years old; Lælio-cattleya × Aurora, L.-c. Proserpine and L.-c. Tresederiana in seven years; L.-c. Cassiope and L.-c. Stella in eight; L.-c. × Arnoldiana in ten;

L.-c. × Cassandra in eleven; L.-c. × Mylamiana in thirteen, which was also the period required for the development of Cattleya × Mitchellii; while Lælio-cattleya × caloglossa brings up the rear with a period of no less than nineteen years—an inordinately long period to wait—though fortunately quite exceptional.

The time required for the maturing of the capsule after the flower is fertilised is also subject to considerable variation. Calanthe requires from three to four months, Masdevallia four, Phalænopsis and *Zygopetalum* six, Lælia purpurata nine, while Dendrobium, Chysis, Anguloa, Cypripedium, and Cattleya are mentioned by Mr. Veitch as requiring about a year before the seed is ripe.

Usually the seed is sown as soon as ripe, and before long the seeds begin to swell. A tiny leaf may push forth within five or six weeks, or it may require as many months, or even longer, but it is on record that in some cases the young plants have been pricked off within two or three months from the date of sowing the seed. This as well as most other details is subject to great variation, and many of the facts are not yet on record, though we hope that now that our pages are open to the subject they will soon be forthcoming.

From the foregoing considerations it is clear that the hybridist cannot hope to see the results of his labours until some three or four years have elapsed since commencing his experiments, though after that time a succession of events may be anticipated. Meantime, the pleasure of watching their gradual development from the minute seed is sufficient reward.

(*To be continued.*)

To-day my gardener has shown me eight different lots of Cypripedium seedlings which are just germinating. The seed was sown, in every instance, on a pot in which a Cypripedium plant is growing, and the compost consists of pure fibrous peat, without the addition of any sphagnum at all, nor is any living sphagnum allowed to grow on the surface of the peat.

The following are the various crosses (the seed-parent being placed first), and the exact date when the seed was sown:—C. callosum × bellatulum, sown August 14th, 1893; a second lot sown October 13th; C. insigne × Spicerianum, sown October 10th; C. callosum × venustum, sown October 13th; C. Dayanum × insigne Chantinii, sown October 13th; C. Lawrenceanum × Boxallii atratum, sown November 4th; C. Lawrenceanum × bellatulum, sown November 14th; and C. barbatum giganteum × Druryi, sown November 25th.

All the seed capsules were ripened in my Cypripedium house, which is a lean-to with an eastern exposure, and the plants which bore these capsules

were never exposed to the full heat of the sun, but were carefully shaded with a fairly thick blind whenever the sunlight was considered too strong for the well being of the plants, no special thought being given to the ripening of the seed. I may say that I neither believe in the necessity of full sun exposure for the ripening of Orchid seed, nor in the constant use of thick blinds to produce perpetual shade for the same end, but in a rational treatment which permits either Cypripediums or other Orchids to enjoy as much sunlight as they can bear without injury to the leaves, or the stunting of their growth.

Bridge Hall, Bury, Lancashire. O. O. WRIGLEY.

CALENDAR OF OPERATIONS FOR APRIL.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperature of the cool house for April should be as follows: 60° by day; with sun, 65°; by night, 55°; morning, 50°. These figures should be maintained as nearly as possible, freely admitting air through the ventilators in accordance with the outside conditions, and keeping a regular supply of moisture on the paths, stages, and other surfaces, by thoroughly damping down at least three times a day. But little fire-heat will now be required in this house, but sometimes the nights are cold, and then it is best to have the pipes warm in order to maintain ventilation. The repotting of Odontoglossom crispum and others of the same type should now cease until early autumn, otherwise, as the hot weather sets in, much shrivelling of the pseudobulbs will occur. The repotting of other cool Orchids should be pushed on wherever it is necessary. Shade the plants from bright sunshine.

The temperature of the intermediate and Cattleya houses should be 65° by day; with sun, 70°; night, 63°; morning, 60°. The plants in these houses, too, should now be shaded during the day in bright weather, and full attention paid to ventilation, always being watchful during changeable and trying weather; see that the atmosphere at the same time does not lack moisture; damping down three times a day will not be too often as a general rule. Repot any plants before the new growth is too far advanced, or the new roots get too long, which then results in an unnecessary check.

The Mexican house should be kept at the same temperature as the last named, but, of course, having no shading now, and very little at any time. The sun runs the thermometer up to a high degree during the day in bright weather, and this warmth must be tempered by large quantities of air and frequent damping down.

The East Indian and Dendrobium houses should be kept at 73° by day

with sun, 83°; night, 68°; morning, 65°. These houses will also require shading, and a very moist atmosphere kept up. Guard against over-watering the Dendrobiums just as they start into growth, more especially D. Bensoniæ and D. superbum, or the growths will damp off. Let both species be placed at the hottest possible part of the house, and keep a watchful eye for red spider on the first-named species, and likewise D. aureum, as it is these species which this pest generally first attacks. As stated last month, these figures are intended only as a guide; temperatures will vary according to the outside conditions, and, except for the cool house, I do not advocate a finger-and-thumb, cut-and-dried temperature; but, at the same time, it is not advisable at this season to let it fall much below that which is recommended. A fresh supply of hard tree leaves saved from last year may be brought in and placed under the stages, as advised in a former calendar, which throw off a nice moisture impregnated with ammonia, and is feeding to the plants.

The new growths of Calanthe × Veitchii and C. vestita, if water has been withheld since blooming, and the plants rested in a dry position in an intermediate temperature, will now have new growths from one to two inches high and new roots pushing from the base, and when in this condition they are best repotted. I find that the nature of the compost for these is not of so much consequence as one might suppose, but what is of far greater importance during the season of growth is the position the plants occupy and the careful use of the watering-can, especially directly after repotting. Ours are potted in a mixture of good turfy loam, broken in small pieces (not chopped), to a bushel of which is added about a gallon each of broken charcoal and coarse silver or river sand, and well mixed up together. The pots are one-third filled with drainage, and the bulbs, having all the old materials shaken away and the old roots trimmed off, are re-potted into this new, sweet material, which is pressed down rather firmly. The base of the bulbs is inserted about half an inch, and secured in that position by a small stick, to which the top of the bulbs are tied. Calanthes succeed best if grown in pots singly or in pairs; full-sized pseudobulbs will want a 32-sized pot, a 48-sized pot being large enough for small bulbs. When the potting is completed the surface of the compost should be about half an inch below the rim of the pot, in order to facilitate the watering. They should then be placed in the warmest house near to the glass, a shelf being a most desirable place, where there is an abundance of light, and shaded only during very bright sunshine in summer. Give a very little water at first—once a week will probably suffice—gradually increasing the supply as the leaves grow and the plant becomes strongly rooted; then treat like any other stove plant, simply thoroughly watering when the plants become dry. The disease known as the "spot," which disfigures the foliage and bulbs, may be caused by insufficient heat, light, or air, but

generally can be traced to over-watering, and when once contracted remains in the system for a considerable time. Liquid manure should not be applied until the new growth is far advanced, about July; then, if the plants are healthy, a weak solution is beneficial.

Thunias admit of easy culture, but they are not so easy to flower satisfactorily, though when well flowered they are most graceful and beautiful, though, unfortunately, the flowers are rather short lived, but the small amount of trouble given for their successful cultivation counterbalances this defect. In a previous calendar I stated that ours are grown in full sunshine in the Mexican house; not on any account are they shaded. They should be repotted now in exactly the same manner as advised for Calanthes, and in similar compost, with the exception that four strong pseudobulbs should be placed in a 32-sized pot at equal distances apart. Water also as above, though very little indeed is needed during the early stages of growth, or they will not bloom freely. Like other occupants of this house, they are slightly syringed overhead during the evening after a day's hot sun in summer. Under this treatment Thunias should grow from eighteen inches to two feet in height only, and, if the pseudobulbs are of sufficient size, each of them should produce a large truss of beautiful blossoms. When blooming is past, the plants should still occupy a similar position and receive water as usual until August, when it should be gradually withheld. Apply liquid manure as advised for Calanthes.

Anguloas I find grow extremely well in the cool house if given a light position. They are just now pushing new growths and flower-buds simultaneously, and at that stage are best repotted, as if delayed until flowering is past the new growth is too far advanced. They are best grown in pots about half filled with drainage, in a compost consisting of two parts of peat to one of sphagnum, with a liberal addition of silver sand. Anguloas are also greatly assisted to make large pseudobulbs by applying weak liquid manure during growth, and these are necessary if successful blooming is expected. I find it a good plan after repotting to place the plants in the intermediate house for a few weeks, in order to encourage and assist the new growth.

Cattleyas are, perhaps, on the whole, the most beautiful of all Orchids, and this, together with their kind and easy cultivation, causes them to take no secondary place in popularity. They are, comparatively speaking, cool growing Orchids, requiring only an intermediate temperature to luxuriate. Cattleyas of the labiata type are to be had in bloom each month of the year. C. Percivaliana is the first to bloom, and opens its lovely flowers with richly coloured lip in January. This species should be repotted now, and it must be grown in the Mexican house, where it gets an abundance of sunshine, otherwise it does not bloom satisfactorily, although free enough to form flower sheaths. After repotting, however, it is best to keep them a

little shaded until re-established. C. Trianæ then follows, and these make a grand display when in the pure air of the country. But I am sorry to add neither of the two species are suitable for growing in large towns, as the flowers coming so early in the season are cut off by smoky fogs, and generally before the bud expands, which is most vexing. Cattleya Trianæ flowers from February to April, and is a most variable species. Some varieties vie in size and beauty with any of the labiata section, though it is true there is a large percentage of inferior varieties among them—larger than in any other—consequently good varieties of Trianæ should receive special care, as they are always valuable. I believe there are few true C. Trianæ alba in existence, though many are sold as such, but most of them vary from year to year. As a rule, the better the plant is cultivated and the growths matured, the more the colouring matter present in the bloom.

Cattleya Mendelii and C. Schrœderæ are the next to open, and these last through April and May; and then comes C. Mossiæ, which lasts through June. In July and August C. gigas and C. Gaskelliana are conspicuous. I have previously said that C. gigas and its varieties should be grown with the Mexican Orchids, or in some similar place, and stinted with water (though not shrivelled) until the new growths are three or four inches high. This species, on the whole, is a shy bloomer, and even under this treatment miss doing so sometimes. Cattleya Gaskelliana should now be potted, or it can be left and done after flowering. I prefer the present time. Then comes for September the beautiful Cattleya Dowiana and its variety aurea. I find it is best to grow this species warmer than most others during the winter months, or the plants will suffer. They are either given a place at the warmest part of the Cattleya house, or in another house where the temperature averages five degrees higher. And if they are near the glass so much the better. I also give this treatment to C. Lawrenceana, which flowers in April and May, and this species is best grown during the summer with the hot Dendrobium. C. Eldorado is another wanting a little extra warmth in winter, and is grown in summer with the last named, as are also C. Lueddemanniana, C. superba, C. Aclandiæ, and the new C. Rex. For Cattleya Dowiana this extra heat during growth is not so essential, and it may be grown at the warmest end of the Cattleya house; but should a plant be late in starting, or in a weak state of health, I recommend that it should be grown in heat until it has recovered.

Cattleya intermedia, Lælia × elegans, and any garden hybrids owing parentage to either, are also better for a little more warmth during winter than the ordinary Cattleya house affords, as these kinds are then generally in active growth. So is Lælia purpurata, but for this more heat is not necessary, as it is a more hardy growing species. L. superbiens should be grown in the Mexican house.

Now is a good time to repot Cœlogyne cristata and others that have

done flowering. C. cristata suffers greatly from being divided, and it is best therefore not to disturb the mass of pseudobulbs until the plant absolutely requires a larger pot, and then avoid their division as much as possible. The Cattleya or intermediate house is the best place for them, and growth is greatly assisted by liquid manure in a weak form about once a week when growing. Sphagnum moss and peat in equal parts is the best material in which to grow them, and it is one of those Orchids that loses its leaves if subjected to strong fumigation.

Odontoglossum citrosmum, having been well rested throughout the winter, will now be pushing flower spikes from the centre of the new breaks, and the plants may have more water, and be suspended from the roof. Protect the tender spikes from woodlice and other pests by placing a small piece of cotton wool round the base.

The lovely winter-blooming Lycaste Skinneri may be repotted when flowering is over. This species should be potted in peat and sphagnum moss in equal parts about once in two years; and it is necessary to be careful when watering—it is safest to keep it on the dry side rather than to over-water, even when in full growth, for if kept too wet a disease in the form of spot ensues, which quickly reduces the vitality of the plant. It is best grown in the intermediate house.

Epidendrum vitellinum is a general favourite, but is sometimes grown too warm. I know of no exotic Orchid so fond of the coolest part of the cool house as this. It may be repotted in the usual compost, and if not done now must be left until flowering is past at midsummer. I prefer the present time.

ORCHID PORTRAITS.

GARDENERS' CHRONICLE.

Lælio-cattleya × Hon. Mrs. Astor (see p. 111).—February 24th, pp. 230, 231, fig. 24.

Lælio-cattleya × Pittiana (see p. 107).—March 2nd, pp. 264, 265, fig. 27.

Cypripedium × Gravesiæ. This is the plant described and figured in our last issue, p. 81, fig. 8.—March 10th, pp. 298, 299, fig. 34.

Dendrobium × Phalænopsis var. Schrœderianum. A fine group of plants in the collection of W. Thompson, Esq., Walton Grange, Stone, Staffordshire.—March 17th, pp. 338, 339, fig. 41.

GARDENERS' MAGAZINE.

Lælio-cattleya × Hon. Mrs. Astor (see p. 111).—February 24th, p. 103, with fig.

LYCASTE × IMSCHOOTIANA (see p. 8 of our January number).—March 17th, p. 151, with fig.

GARDENING WORLD.

ANGRÆCUM SESQUIPEDALE. A fine plant with eighteen flowers from the collection of M. Sanderson, Esq., Edinburgh.—March 3rd, pp. 421, 422, with fig.

PHALÆNOPSIS SCHILLERIANA. A specimen plant.—March 10th, pp. 436, 437, with fig.

JOURNAL OF HORTICULTURE.

LÆLIO-CATTLEYA × HON. MRS. ASTOR (see p. 111).—February 22nd, p. 141, fig. 22.

CALANTHE × BARON SCHRÖDER. A handsome hybrid with deep rose-purple flowers and a deeper throat to the lip. Calanthe vestita gigantea and C. Regnieri are the parents.—March 1st, p. 163, fig. 25.

LÆLIO-CATTLEYA × TYDEA. A handsome hybrid raised by Messrs. Veitch from Lælia pumila ♀ and Cattleya Trianæ ♂. It most resembles the former and has rosy mauve flowers with a deep purple-crimson lip.—March 8th, p. 181, fig. 30.

CYPRIPEDIUM × ASHWORTHIÆ. Supposed to have been derived from C. × Leeanum superbum and C. × selligerum majus, but apparently identical with the former.—March 15th, p. 197, fig. 33.

ORCHID ALBUM.

ONCIDIUM MACRANTHUM, Lindl.—t. 485.

CYPRIPEDIUM SUPERBIENS, Rchb. f. It is remarkable that all the plants in cultivation should have arisen from two original ones, and that the habitat is not precisely known.—t. 486.

LÆLIA GRANDIS TENEBROSA, Gower. The plant now known as L. tenebrosa, Rolfe, formerly thought to be a variety of the old L. grandis (see p. 146 of our last volume).—t. 487.

DENDROBIUM DEVONIANUM, Paxt. Southern China is given as one of the habitats of this beautiful plant, but incorrectly, as that locality belongs to the quite different D. Loddigesii, Rolfe, formerly confounded with it.—t. 488.

REICHENBACHIA.

Part 6 of Vol. II. of the second series contains:—

ZYGOPETALUM CRINITUM, Lodd.—p. 57, t. 73.

CATTLEYA LUEDDEMANNIANA ALBA.—A beautiful albino with light yellow throat.—p. 59, t. 74.

CYMBIDIUM × WINNIANUM.—A beautiful hybrid from C. giganteum ♀ and C. eburneum ♂, whose characters are pointed out at p. 22 of our last volume.—p. 61, t. 75.

MASDEVALLIA × COURTAULDIANA, Rchb. f. A charming hybrid derived from M. caudata Shuttleworthii ♀ and M. rosea ♂, in the collection of N. C. Cookson, Esq.—p. 63, t. 76, fig. 1.

MASDEVALLIA × GELENIANA, Rchb. f. Raised by Messrs. F. Sander and Co. from M. caudata Shuttleworthii ♀ and M. xanthina ♂.—p. 63, t. 76, fig. 2.

MASDEVALLIA × MEASURESIANA, Rolfe. Raised in the same establishment as the preceding, from M. tovarensis ♀ and M. amabilis ♂.—p. 63, t. 76, fig. 3.

XENIA ORCHIDACEÆ.

The last-issued number of this work contains the following :—

TRICHOPILIA KIENASTIANA, Rchb. f.—p. 109, t. 261. Apparently only a form of T. suavis, Lindl.

MAXILLARIA LONGIPES, Lindl.—p. 109, t. 262.

CŒLOGYNE CUPREA, Wendl. and Kränzl.—p. 110, t. 263.

SPATHOGLOTTIS WRAYI, Hook. f.—p. 111, t. 264.

CYPRIPEDIUM ROEBELENII, Rchb. f.—p. 113, t. 265.

PHOLIDOTA SESQUITORTA, Kränzl.—p. 114, t. 266, fig. 1.

EULOPHIA WARBURGIANA, Kränzl.—p. 115, t. 266, fig. 2.

RODRIGUEZIA LEHMANNI, Rchb. f.—p. 116, t. 267, fig. 1.

PLEUROTHALLIS GELIDA, Lindl.—p. 116, t. 267, fig. 2.

PLEUROTHALLIS KEFERSTEINIANA, Rchb. f.—p. 117, t. 268, fig. 1.

PLEUROTHALLIS POLYLIRIA, Rchb. f.—p. 118, t. 268, fig. 2.

LUISIA GRIFFITHII, Kränzl.—p. 119, t. 269, figs. 1–9. This is Vanda alpina, Lindl.

SACCOLABIUM WENDLANDORUM, Kränzl.—p. 121, t. 269, figs. 10–20. The plant known as Cleisostoma Wendlandorum, Rchb. f.

DENDROBIUM SPHEGIDOGLOSSUM, Rchb. f.—p. 121, t. 270, fig. 1.

LISTROSTACHYS METTENIÆ, Kränzl.—p. 122, t. 270, fig. 2.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

AT the March meeting at Ghent M. Jules Hye presented a series of Orchids of the first rank ; notably a splendid group of fifteen Odontoglossums ; the beautiful Phaius × Cooksoni ; Miltonia × Bleuana rosea, whose large white flowers were tinted with rose ; a dark Odontoglossum radiatum ; O. × cuspidatum ; magnificent examples of Cœlogyne cristata ; Cypripedium × Rex, derived from C. Spicerianum × villosum ; C. × Dauthieri ; a fine white Lælia anceps, &c. M. A. Van Imschoot exhibited the beautiful

Lycaste × Imschootiana; and M. Kuykun a beautiful example of Cypripedium Chamberlainianum with four flowers.

The fiftieth meeting of the Orchidéene of Brussels was one of extraordinary brilliancy, owing to the *fête* in honour of MM. Jean and Lucien Linden. Among the specially remarkable things were Masdevallia × Pourbaixii from M. Pourbaix, of Mons, derived from M. Shuttleworthii ♀ and M. Veitchiana ♂; Cattleya Trianæ of exceptional size and colour from M. A. Van Imschoot; a series of Odontoglossum and Dendrobium flowers from W. Thompson, Esq., including D. Phalænopsis of great beauty; Cattleya Trianæ, Odontoglossum crispum, O. triumphans, and Cypripedium Mastersianum, from M. le Comte de Bousies; Odontoglossum crispum leopardinum from M. G. Warocqué; Cattleya Trianæ and Odontoglossum crispum from M. Madoux; an admirably flowered O. gloriosum from M. Pauwells; O. crispum from Dr. Capart; Cymbidium Lowianum from M. Cahuzac, &c., &c.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

THE work of the Orchid Committee was unusually heavy on March 13th, when a very large quantity of plants found their way to the Drill Hall, James Street, Victoria Street, Westminster. The Committee awarded one Gold and four Silver Banksian Medals, six Silver Flora Medals, seven First-class Certificates, seven Awards of Merit, and nine Botanical Certificates.

A Silver Flora Medal was awarded to the President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), for a large group consisting largely of hybrid Dendrobiums, Cirrhopetalum picturatum, Bulbophyllum Sillemianum, Maxillaria angustissima, &c. First-class Certificates were granted to Odontoglossum × excellens chrysomelanum and Masdevallia gargantua, and a Botanical Certificate to Dendrobium Kingianum album.

A Gold Banksian Medal was awarded to Baron Schröder, F.R.H.S., The Dell, Staines (gr. Mr. H. Ballantine), for a unique specimen of the charming Odontoglossum crispum apiatum, the flowers of which were almost four inches across, pure white with heavy chestnut blotches.

W. E. Brymer, Esq., M.P., F.R.H.S., Ilsington House, Dorchester (gr. Mr. Powell), exhibited Dendrobium × Benita (D. aureum ♀ × D. Falconeri ♂). Segments white tinged with rose; lip like that of D. × Ainsworthii or D. × Leechianum, but much larger.

Messrs. Collins and Collins, Cumberland Park Nurseries, Willesden, obtained a Silver Banksian Medal for a collection of Cœlogyne cristata, Cymbidium Lowianum, C. eburneum, and Cattleya Percivaliana.

A First-class Certificate was granted to Dendrobium × Sibyl (D. Linawianum ♀ × D. bigibbum ♂), a brilliant purple-flowered hybrid, shown by Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. Murray).

The Earl of Cork and Orrery, Marston, Frome (gr. Mr. W. Iggulden, F.R.H.S.), exhibited a grand deep-coloured form of Arachnanthe (Vanda) Cathcartii, to which a First-class Certificate was granted.

Messrs. Cutbush and Sons, Highgate, contributed several Dendrobium thyrsiflorum and Cypripediums.

Welbore S. Ellis, Esq., F.R.H.S., Hazelbourne, Dorking (gr. Mr. Masterson), exhibited Bollea Patini.

J. Gurney Fowler, Esq., F.R.H.S., Glebeland, Woodford (gr. Mr. J. Davis), was fortunate in obtaining two Silver Flora Medals—one for a large group of Oncidiums, Dendrobiums, &c., and one for a splendid specimen of Cattleya Trianæ.

Some good Dendrobium × Ainsworthii were exhibited by Miss Harris, of Lamberhurst, Kent.

M. Jules Hye Leysen, 8, Coupure, Ghent, sent two strong plants of Cypripedium × Rex (C. Spicerianum magnificum ♀ × C. villosum ♂), a shining brown and yellow hybrid similar to C. × Lathamianum.

From C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), came Cypripedium × Lobengula (C. × Harrisianum nigrum ♀ × C. Boxallii ♂), C. Chamberlainianum, and Dendrobium nobile, Ingram's variety.

A Cultural Commendation was awarded to Dendrobium × splendidissimum Leeanum, exhibited by W. R. Lee, Esq., F.R.H.S., Audenshaw, Manchester (gr. Mr. J. Billington). D. × Edithæ (D. nobile nobilius ♀ × aureum ♂), with creamy segments and deep velvet red lip, also came from the same collection.

Messrs. W. L. Lewis and Co., Chaseside, Southgate, obtained a Silver Banksian Medal for a group in which several Trichosma suavis, Cymbidium eburneum, Odontoglossum Cervantesii roseum, Brassavola glauca, Rodriguezia fragrans, and Colax jugosa were present, as well as Bifrenaria racemosa, which received a Botanical Certificate.

A Silver Banksian Medal was also won by Messrs. Hugh Low and Co., Upper Clapton, E., for a collection of Miltonia Roezli, Oncidium ampliatum, and a plant of the rare Houlletia Lansbergii.

A specimen of Cypripedium Chamberlainianum excellens came from Mr. P. McArthur, the London Nurseries, Maida Vale.

Mr. J. McBean, Cooksbridge, Lewes, exhibited a pale form of Dendrobium nobile.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman, F.R.H.S.), exhibited several good things. An Award of Merit

was granted to Cattleya Loddigesii and to Lælia superbiens—the latter having nine rosy lilac flowers on the spike—and a Botanical Certificate to Pleurothallis Grobyi and the minute P. Barberiana. Flowers of Vanda suavis Veitchii were also shown.

F. W. Moore, Esq., F.R.H.S., Botanic Gardens, Glasnevin, sent Calanthe striata, Arpophyllum giganteum, and Pleurothallis asterophora, to each of which a Botanical Certificate was awarded. A deep-coloured Sobralia macrantha and Dendrobium Fytchianum were also shown.

John S. Moss, Esq., F.R.H.S., Wintershill House, Bishops Waltham (gr. Mr. Bazeley), obtained a First-class Certificate for a small plant of the new Cœlogyne Mossiæ, Rolfe, which had six expanded flowers, pure white with a crescent-shaped band of yellow on the lip.

Pantia Ralli, Esq., F.R.H.S., Ashtead Park, Epsom, exhibited Miltonia flavescens grandiflora.

A Silver Flora Medal was given to Messrs. F. Sander and Co., St. Albans, for a collection of Dendrobium Phalænopsis, Cymbidium Lowianum, Cypripedium Rothschildianum, and Spathoglottis aurea. In addition to these, a First-class Certificate was granted to Phaius × Marthæ (P. Blumei ♀ × P. tuberculosus ♂), another of Mr. Maynard's fine hybrids, with pale buff sepals and petals and a large lip like that of the male parent in shape, densely covered with golden-brown spots, except in front, which is white and blotched with pale rose. Lycaste Skinneri Mrs. H. Ballantine received an Award of Merit, and Dendrobium Imperatrix a Botanical Certificate.

A. H. Smee, Esq., F.R.H.S., The Grange, Wallington (gr. Mr. Cummins), exhibited Phaius Blumei and Dendrobium tetragonum, the first of which obtained an Award of Merit, the second a Botanical Certificate.

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited a large specimen each of the brilliant purple Dendrobium nobile nobilius and D. × splendidissimum, and obtained a Silver Flora Medal as an award for the two plants. D. × Schneiderianum, D. × Cooksoni, and Cypripedium × Davidsonianum came from the same collection.

J. W. Swinburne, Esq., F.R.H.S., Corndean Hall, Winchcombe, exhibited a hybrid Cypripedium somewhat similar to C. × œnanthum.

W. Thompson, Esq., F.R.H.S., Walton Grange, Stone, Staffs. (gr. Mr. W. Stevens), exhibited a stem of Dendrobium Wardianum giganteum, about four feet long, and bearing nearly sixty large flowers on three-fourths of its length. The specimen, which received a Cultural Commendation, was from a plant which had been pruned by Mr. Stevens.

Messrs. Jas. Veitch and Sons, King's Road, Chelsea, exhibited several noteworthy novelties. Dendrobium × Virginia (D. japonicum ♀ × D. Bensoniæ ♂), with creamy flowers, obtained a First-class Certificate. D. ×

Cybele (D. Findlayanum ♀ × D. nobile ♂), with white, crimson-tipped flowers, and Phalænopsis × Vesta (P. Aphrodite ♀ × P. rosea leucaspis ♂), with pale rose flowers, each received an Award of Merit.

Walter C. Walker, Esq., F.R.H.S., Winchmore Hill (gr. Mr. G. Cragg), was awarded a Silver Banksian Medal for a collection in which were Cymbidium Lowianum, Odontoglossum Cervantesii, Cypripedium Chamberlainianum, and Arpophyllum giganteum, the latter receiving an Award of Merit.

H. Weetman, Esq., F.R.H.S., Little Haywood, Staffs., exhibited several fine blooms of Dendrobium nobile Cooksoni.

A Silver Flora Medal was granted to Messrs. B. S. Williams and Son, Upper Holloway, for a collection containing several Cœlogyne cristata alba, C. sparsa, Angræcum modestum, Odontoglossums, and Trichocentrum tigrinum, the latter obtaining an Award of Merit.

CORRESPONDENCE, &c.

R. Young, Esq., Sefton Park, Liverpool, sends six very fine varieties of Cattleya Trianæ. No. 1 is the pure white C. T. virginalis, a large and well-shaped flower with deep buff-yellow lines, almost suffused on the disc; 2 has very broad petals, over 2½ inches across, the front lobe of the lip intense purple-crimson, and all the rest of the flower light blush; 3 is rather similar in colour, but has longer petals, and the purple-crimson extends further along the margin of the side-lobes of the lip; 4 is much like 2 in shape, but the side-lobes of the lip well expanded, and the lighter crimson colour extends well down into the throat and right round the side-lobes; 5 is a deeper blush-pink with a small crimson area near the apex; and 6 has the flower almost uniformly blush-pink, the lip unusually expanded, no trace of the deeper coloured front lobe, and only a small remnant of the yellow disc. Nos. 1, 4 and 6 are extremely beautiful. Lycaste Skinneri Poyntzii is a brightly-coloured variety with deep rose-coloured petals, and a nearly white lip.

An exceptionally fine Cypripedium Lawrenceanum comes from Mr. J. Milburn, gr. to C. W. Fincken, Esq., Hoyland Hall, Barnsley, with the dorsal sepal over 2¾ inches broad.

Wm. Owen, Esq., Northwich, Cheshire, sends a large and well-formed flower of the light Cattleya Trianæ delicata.

Cypripedium Lawrenceanum atrorubens from O. O. Wrigley, Esq., Bridge Hall, Bury, is a richly-coloured form, with very deeply-coloured lip, and the dorsal sepal suffused with purple except at and near the margin.

W. M. A., Weston-super-Mare. Calanthe rubens, Ridl., Cypripedium × vernixium, and two forms of Dendrobium aureum.

W. L., Hapton. The Phaius tuberculosus is a very good form.

E. W., Halifax. A good form of Cymbidium Lowianum.

Mr. H. J. Skingley, St. Heliers, Jersey, sends a pseudobulb of Eria floribunda with seven racemes of small nearly white flowers with a purple lip. He remarks that it is very free in growth and flower, and rather pretty. The effect is certainly very graceful.

Messrs. James Veitch and Sons, Chelsea, send their charming rose-coloured Phalænopsis × intermedia var. Vesta, described at p. 52 of our last volume. It is far more like the seed parent, P. rosea leucaspis, both in shape and colour, than any other form of P. intermedia. Dendrobium × Cybele, also enclosed, is a handsome hybrid raised by them a few years ago from D. Findlayanum and D. nobile, but most resembles the latter.

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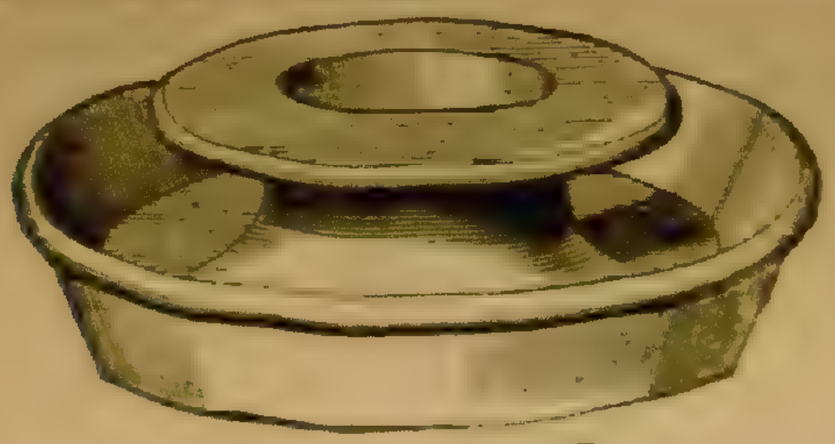

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VOL. II.] MAY, 1894. [No. 17.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

PAGE

Notes 129
Obituary 130
Dies Orchidianæ 131
Novelties 132
Cattleya × venosa 132
Odontoglossum Rossii var. immaculatum 132
The History of Orchid Cultivation (Part III.) 133
Orchids in the Jungle 136
Hybrid Odontoglossums 139
Cypripedium spectabile and C. pubescens as poisonous plants 141
The Hybridist 142
Dendrobium × Doris 142
Dendrobium × Euryalus 142
Cypripedium × Wiganianum ... 143
Cypripedium × Io-Spicerianum ... 143
Cattleya × Arthuriana 143

PAGE

The Hybridist (*continued*)—
Cypripedium × Pelias 144
Cypripedium × Anton Joly ... 144
Cypripedium × Madame Jules Hye 144
Cypripedium × Burtonii 144
Cattleya × Wendlandiana 144
Cypripedium Godefroyæ leucochilum (Fig. 16) 145
Cycnoches pentadactylon 146
Do Cypripediums sport? 147
Saccolabium Moorcanum var. candidulum 147
Cyrtopodium virescens 148
Calendar of Operations for May ... 148
Orchid Portraits 152
Culture of Masdevallias 153
Orchids at the Royal Horticultural Society 155
Correspondence, etc. 160

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THE ORCHID REVIEW.

VOL. II.] *MAY*, 1894. [No. 17.

NOTES.

THE present month will be a busy one, as numerous important events follow each other in quick succession.

The next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Victoria Street, Westminster, on May 8th, when the Orchid Committee will meet at the usual hour of twelve, noon. The afternoon lecture at three o'clock will be given by Sir Trevor Lawrence, Bart., the President of the Society, the subject being "Orchids," on which Sir Trevor is exceptionally well qualified to speak. An interesting meeting may be anticipated.

On the 9th and 10th inst., the first portion of the late Mr. G. Hardy's collection will be offered for sale on the premises, Pickering Lodge, Timperley, Cheshire, by Messrs. Protheroe and Morris.

The Grand Exhibition of Orchids, &c., of the Royal Botanical and Horticultural Society of Manchester will be opened at 2.30 p.m. on May 11th, by the President of the Society, the Earl of Derby, who will also preside at the annual dinner, which will take place in the Gardens, Old Trafford, at 4 p.m.

The Great Annual Flower Show of the Royal Horticultural Society will be held in the Inner Temple Gardens, Thames Embankment, on May 23rd to 25th inclusive. Class 15 is devoted to Orchids, and, as on previous occasions, Silver Cups, Medals, and Certificates will be awarded according to merit. As already mentioned at p. 66, a Williams' Memorial Medal

will be offered for the best group of Cypripediums exhibited on this occasion.

A Grand Flower Show will also be held at Antwerp on May 13th, 14th, and 15th, in connection with the Universal Exhibition. We have received the Schedule of Prizes, which shows that Classes 89 to 108 are set apart for Orchids, for which numerous Medals are offered. For the best general collection, a Gold Medal is offered by His Majesty the King, and a second prize of a Gold Medal or 200 francs. There are also prizes for smaller collections and special groups, as Dendrobium, Odontoglossum, Cypripedium, Cattleya, Lælia, and Masdevallia; for the best collection of hardy Orchids, the best seedling Orchid, and others.

Last month we alluded to the flowering of Eulophiella Elisabethæ at St. Albans. It has how flowered with Sir Trevor Lawrence, Bart., at Burford, and was exhibited at a meeting of the Royal Horticultural Society, on April 10th, when it received a First-class Certificate, and attracted more attention than any other Orchid exhibited. It is a striking and beautiful plant.

The meeting held on April 24th, like its predecessors, was a very successful one, Orchids being represented in quantity. Perhaps the most remarkable was the two-flowered spike of Lælio-cattleya × Digbyano-Mossiæ sent by Baron Schröder. The flowers are considerably larger than when first exhibited, and their delicate pink colour and beautifully fringed lip are quite unique features.

OBITUARY.

We regret to have to record the death of Mr. George Hardy, which occurred at his residence, Pickering Lodge, Timperley, Cheshire, on March 26th, at the age of 62 years. For twenty years the deceased was an enthusiastic cultivator of Orchids, and in that time brought together one of the finest collections in the north of England. It contains many beautiful specimens, as Mr. Hardy spared no expense in securing the best novelties and choicest varieties as opportunities occurred. He was one of the principal supporters of the Manchester shows, exhibiting Orchids very largely. His name is commemorated in the magnificent natural hybrid Cattleya × Hardyana, also in C. Mossiæ Hardyana and C. Trianæ Hardyana. As in so many similar cases, the collection is to be dispersed, and the first portion will be offered for sale on the premises on May 9th and 10th next.

DIES ORCHIDIANÆ.

We are now in the midst of the busy season. With the Manchester Show almost within sight, and the annual display at the Inner Temple Gardens close at hand, there is little time for theorising. Orchids generally are looking extremely well, and with fine weather the success of these two events should be assured. The season is an unusually early one—already, in the third week in April, I have Orchis mascula in full flower in an ordinary border, and it is also out in the fields—so that the spell of dull weather which seems to be setting in will be welcome to keep things a little in check. The Royal Horticultural Society is making an experiment in extending the exhibition over three days, which I hope will be successful, though I have heard the question put as to what will be the effect of a third day's exposure in those windy tents if the weather be cold. Perhaps the fates will be favourable once more.

It is pleasant to see the returning prosperity of the old Society; but there is one feature of the very interesting meetings at the Drill Hall to which I think a little more attention might be paid. I have frequently found a difficulty in ascertaining to whom some particular plant belonged, and find that others have a similar experience. At times, too, the plants are unduly crowded, though want of space is a matter more difficult to cope with. Perhaps the two evils are not altogether unconnected, though I cannot help thinking that some better means of indicating the limits of the various groups could be devised.

Speaking of Orchis mascula, I have often wished that more attention were paid to these hardy terrestrial Orchids. It is true that some of them are rather capricious, but others succeed admirably when planted in a moist, turfy spot, and when in flower they are charming little plants. Mr. H. Correvon, of the Jardin Alpin d'Acclimatation, Geneva, now calls attention to them in the pages of the *Gardeners' Chronicle*, and considers that they are greatly neglected by plant lovers. He has attempted to cultivate as many of the European species as possible at Geneva, and has only succeeded with twenty-five, a few of them being familiar British species. I find that several species grow and flower well in an ordinary border, while others fail to put in an appearance the second year. It is highly probable that a little more attention to the conditions under which these delightful little plants grow naturally would lead to more success in their culture, and to this the article alluded to points the way. Some particulars respecting them were also given at p. 246 of the last volume of the *Orchid Review*. They are certainly deserving of more attention.

Some of these hardy terrestrial species are admirably adapted for pot culture, and one cannot help being struck with the beauty of the North American Cypripediums when grown in this way. C. pubescens and C. spectabile are now often met with, and C. montanum occasionally, and they introduce a very pleasing variety into the collection. The Siberian C. macranthum, for some reason, is less frequently seen, though its large purple flowers are particularly attractive. Several other species are also cultivated in a few collections, and one cannot help wishing that such interesting plants were more frequently met with.

ARGUS.

NOVELTIES.

CATTLEYA × VENOSA, Rolfe.—Some time ago a very distinct Cattleya flowered in the establishment of Messrs. Linden, L'Horticulture Internationale, Brussels,which might almost be described as C. Harrisoniæ with the lip of C. Forbesii, and is evidently a natural hybrid between them. The sepals and petals are like those of the former, both in shape and colour, while the lip has the characteristic markings and verrucose disc of C. Forbesii, with the shape slightly modified and the front lobe strongly flushed with rosy purple. It occupies the same intermediate position between the two species named that C. × Krameri occupies between C. Forbesii and C. intermedia, and the origin of that hybrid has fortunately been proved experimentally. The three species in question are all known to occur in the Rio district, and it is now evident that the two former also grow together. It is very curious how these natural hybrids keep turning up among the importations which are continually being brought over.

ODONTOGLOSSUM ROSSII, Lindl., VAR. IMMACULATUM, Rolfe.—A very distinct and remarkable variety of Odontoglossum Rossii has appeared in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, in which every trace of spotting has vanished from the flower, leaving the petals and lip white and the sepals pale pink. Last year it presented the same character, showing that it is no accidental peculiarity. Mr. Wrigley states that he has only two small plants, and never met with an albino before among the many hundreds he has seen. Nor do we ever remember to have seen one. Although identical in shape, its peculiar colour gives it quite a different appearance from the ordinary form. So distinct and pretty a plant will no doubt be taken care of, but a long time must elapse before the stock can be multiplied to any great extent.

THE HISTORY OF ORCHID CULTIVATION.

PART III.

(*Continued from page* 78.)

THE *Botanical Register* was founded by Sydenham Edwards, in 1815, but only three Orchids appear in the first volume—Epidendrum nutans (t. 17), E. fuscatum (t. 67), and E. umbellatum (t. 80), all of which have already been noticed. In the following year, however, a new genus was figured in the work, namely, Cryptarrhena lunata (t. 153). It flowered with Messrs. Lee and Kennedy, at Hammersmith, having been introduced from Jamaica. It is probably not in cultivation at the present time. Cyrtopera Woodfordii also flowered in 1816. It had been sent from St. Paul, Brazil, by Mr. E. J. A. Woodford, to Mr. Anderson, Curator of the Apothecaries Company's garden at Chelsea, where it flowered.

In 1817 Sarcanthus paniculatus flowered at Smallberry Green, in the collection of Sir Joseph Banks, who had introduced it from China, and was figured in the *Botanical Register* (t. 220) under the name of Aërides paniculatum. The event was noteworthy, as affording apparently the first instance of basket culture of Orchids in England, for we read: "The most successful mode of treating plants of this nature in these climates has been devised by Sir Joseph Banks. . . . The method he pursues is to place the plants separately in light cylindrical wicker-baskets or cages, of suitable widths, of which the framework is of long slender twigs wreathed together at the bottom, and shallowly round the side; the upper portion being left open that the plant may extend its growth in any direction through the intervals, and yet be kept steady in its station, the ends of the twigs having been tied together by the twine that suspends the whole to the woodwork of the stove. A thin layer of mould is strewed on the floor of the basket, on which the root-stock is placed, and then covered lightly over with a sufficiency of moss to shade it and preserve a due degree of moisture, water being occasionally supplied." A sketch of this rather primitive Orchid basket is given on the plate.

In 1818, Messrs. Loddiges, of Hackney, commenced their *Botanical Cabinet*. The first three volumes all bear this date, and include seventeen Orchids. The work commences with the North American Goodyera pubescens, and we note that in commenting on its recorded introduction by the Duke of Kent, in 1802, they observe that it "had been known long before, as we received it above thirty years ago from our ancient and worthy friends, J. and W. Bartram." The most interesting Orchids figured are Hæmaria discolor (figured as Goodyera discolor at t. 143), said to have been introduced from Rio, but now known to be Chinese, and Bonatea speciosa (t. 284) from the Cape of Good Hope. The North American Habenaria lacera (t. 229) may also be mentioned. The remainder

have already been considered—in fact, about this period there was a decided dearth of novelties.

In 1819 the first species of Cattleya and Angræcum were recorded, though under other names. Cattleya Loddigesii flowered with Messrs. Loddiges, and was figured in the *Botanical Cabinet* as Epidendrum violaceum (t. 337). This, however, was not its original appearance, as in 1827 it was stated (*Hooker's Exotic Flora* III., t. 186) that it was sent from St. Paul's, Brazil, by Mr. Woodforde to Mr. Shepherd of the Liverpool Botanic Garden, as long before as 1810, that it flowered the following year and every year since, and that Mr. Shepherd believed that all the plants then in cultivation were from the original piece. Angræcum falcatum was figured in the *Botanical Magazine* (t. 2097) as Limadorum falcatum. It flowered in the collection of the Horticultural Society in May, 1819, but is said to have first been cultivated in England by Sir Abraham Hume, who received it from Roxburgh.

In 1820 several very interesting novelties were recorded. Cypripedium venustum, the first tropical species, was figured at t. 2129 of the *Botanical Magazine*, with the information that it flowered in November with Messrs. Whitley, Brames, and Milne, who had received it from the Calcutta Botanic Garden, whence it was brought by Captain Craigie. Vanda Roxburghii was figured in the *Botanical Register* (t. 506). It flowered in the hothouse of Lady Banks, at Spring Grove, in the autumn of that year, having been obtained from India by Sir Joseph Banks. Oncidium flexuosum, Eulophia maculata and Polystachya luteola also flowered with Messrs. Loddiges, and were figured in their *Botanical Cabinet*. The former is noted as a new and beautiful species from Brazil, bearing nearly a hundred flowers, which remained in perfection six weeks. It was grown in a compost of moss, sawdust, and a little sand.

Lindley's Collectanea Botanica, which commenced in 1821, has been termed "the pioneer of the Orchid era." Fourteen of the 41 plates are devoted to Orchids; the most interesting novelties being Cattleya labiata (t. 33), Cypripedium insigne (t. 32), Lissochilus speciosus (t. 31), Oncidium barbatum (t. 27), and Catasetum Hookeri (t. 40), all of which flowered in or before 1821. Cattleya labiata was sent from Brazil by Swainson to Mr. William Cattleya, of Barnet, with whom it flowered in November, 1818, and after whom it was named. Cypripedium insigne also flowered in the same collection, it is believed for the first time in England. It had been obtained from Mr. Shepherd, of the Liverpool Botanic Garden, who had received it from Mr. Wallich. Lissochilus speciosus flowered with Mr. Griffin, of Lambeth, who received it from the Cape. Lindley remarked: "We think, without exception, it is the finest plant of the Order we have ever seen alive." Oncidium barbatum flowered at the Glasgow Botanic Garden, whence it had been received, with other fine Brazilian Orchids, from

Swainson. Catasetum Hookeri is a Brazilian species, which flowered in Mr. Swainson's stove at Halesworth, in 1818, doubtless sent or brought home by himself.

Mr. Cattley's collection was perhaps the leading one about this time, and we note that it furnished the materials for three other figures in the same work—Sarcanthus teretifolius (figured as Vanda teretifolia at t. 6), S. rostratus (t. 39 B), and Acampe multiflora (Vanda multiflora, t. 38). Trizeuxis falcata (t. 2) was a new genus which flowered with Mr. Griffin, of South Lambeth, received from Trinidad. Spiranthes pudica (t. 30) was introduced by the Horticultural Society from China, and flowered in their garden at Chiswick, in July, 1821; as also did Ionopsis utricularioides (t. 39 A) in May, 1824. This had been sent from Trinidad by the governor, Sir R. Woodford. Under t. 37 (Cattleya Loddigesii) we also find the record of a third Cattleya, C. Forbesii, a yellow-flowered species, sent from Rio to the Horticultural Society by Forbes.

In 1822 very few additions were made. The most interesting were Eulophia guineensis, collected at Sierre Leone, by G. Don, for the Horticultural Society, in whose collection at Chiswick it flowered; Rodriguezia secunda, sent from Trinidad by the Rev. Mr. Adam to Messrs. Loddiges, who flowered it; Gomeza recurva, imported from Brazil by Messrs. Loddiges; and Macradenia lutescens, which flowered with Mr. Griffin, of South Lambeth, who had obtained it from Trinidad.

In 1823 a few other novelties were recorded; as Calanthe veratrifolia, which flowered finely in Mr. Colvill's hothouse, at Chelsea, producing spikes three feet high; Eulophia gracilis, sent from Sierre Leone by G. Don to the Horticultural Society; Xylobium squalens, sent from Rio by Forbes to the same collection; Oncidium luridum, which flowered with Mr. Griffin at South Lambeth; also Dendrobium Pierardi, Epidendrum nocturnum, and Cirrhæa viridipurpurea, which flowered with Messrs. Loddiges. This year also saw the commencement of *Hooker's Exotic Flora*, in the first volume of which we note the further additions of Dendrobium fimbriatum and Cymbidium lancifolium, both of which flowered at the Liverpool Botanic Garden.

The most interesting additions of 1824 were Aëranthes grandiflora, sent from Madagascar by Forbes to the Horticultural Society—apparently the first Madagascar Orchid in cultivation; Brassia caudata, from the West Indies, which flowered in Mr. Lee's Hammersmith Nursery; and Catasetum macrocarpum, sent from Bahia by G. Don to the Horticultural Society.

Some notable additions were recorded in 1825. In June of that year the beautiful Disa grandiflora flowered, for the first time in Europe, in the collection of Mr. Griffin, of South Lambeth, who had received it from the Cape of Good Hope. Oncidium Papilio, which had been sent from Trinidad by the Governor, Sir Ralph Woodford, flowered in Mr. Colvill's Nursery, at

Chelsea. Bifrenaria Harrisoniæ flowered in the collection of Mrs. Arnold Harrison, of Aigburth, near Liverpool, having been sent by her brother at Rio. Dendrobium aqueum, Eria flava, and Bulbophyllum Careyanum flowered with Mr. Shepherd, at the Liverpool Botanic Garden. Cœlogyne fimbriata, the earliest cultivated species in the genus, flowered in the Horticultural Society's garden, at Chiswick, having been sent from China by Mr. J. D. Parks. Ornithocephalus gladiatus and Pholidota imbricata flowered at the Glasgow Botanic Garden, Eria stellata with Mr. Cattley, at Barnet, and Oncidium pumilum with the Rev. Mr. Herbert, at Spofforth.

It is evident that at this time Orchids were steadily growing in popularity. The following note from the sixth volume of the *Transactions of the Horticultural Society* (p. 83), published in 1826, throws further light on the subject: "The Society has, by singular exertion, succeeded, in two years, in forming such a collection of this tribe of curious plants as was never seen in Europe before. It consists of about 180 of tropical kinds." From various notes here and there to be found we learn that they were generally potted in a compost of moss and sawdust, or rotten wood, with some peat or vegetable earth, and sometimes an admixture of loam and sand, and that they were usually grown in stoves heated by hot-air flues. It is also certain that many of the tropical kinds were cultivated with considerable success.

(To be continued.)

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 13.)

Moulmein is, of all hunting-grounds, the most prolific in Orchids. Any one visiting Kew, and going through Mr. Parish's interesting notes and drawings of the Moulmein Orchids, will at once realise this.

It is not only worth while visiting Moulmein on account of the great number and variety of Orchids to be found in the surrounding country, but also for the great beauty of the scenery. On entering the Salween River, from the Gulf of Martaban, after passing Amherst, the traveller is at once struck, not only with the richness of the tropical vegetation on each bank of the river, but with the great beauty of the scenery which opens out as he advances. In the wide plain, through which run the various rivers which join the Salween, are seen limestone hills, rising perpendicularly out of the flat delta, of most fantastic shape; and these are again backed up by the range of mountains which run along the frontier, and separate Burmah

from Siam; forming a scene of beauty not readily forgotten by those who have seen it. And considering that these hills are the treasure-house from which so many fine things come, it is well worth while for an Orchidist to make a winter trip to that favoured spot. What treasures will he find if he is energetic and goes far enough into the interior!—not a difficult matter, as nature has provided her own roads in the rivers Attaran, Ghine, Salween, and other tributaries.

The rainfall during the year in this district is about two hundred inches. The rainy season commences with a few showers in March. The collector should therefore gather in all his plants by the end of February. In April the showers are more frequent, the monsoon rains bursting in May, with exceedingly heavy rains during the summer months.

Of all the hundreds of varieties of Orchids that grow in the neighbourhood of Moulmein, the first to attract attention is Dendrobium formosum. The variety which grows here is that known by the gardeners as "giganteum." Of all the Nigro-hirsute Dendrobiums this bears the largest flowers, and is the most popular.

At almost any time of the year, in Moulmein, but more especially during the rains, the traveller will meet the Burmese, bamboo on shoulder, bearing two baskets full of the flowers of this favourite Orchid to the Moulmein market; always coming from the direction of Amherst, which is the richest locality for this plant. The flowers are cut off and brought in with a portion of the stem, and so rapid is the growth during the rains, that from the base of the cut stem two new shoots will arise which will produce flowers some months later during the same year.

Dendrobiums of the Nigro-hirsute group, called by the botanists section Formosæ, are not always a success in England, which is not to be wondered at, as most of the varieties grow under very varying conditions. By giving the character of the districts in which the several forms grow, and the special conditions of temperature and rainfall, it is possible that some useful hints may be gathered, which may help growers to make the cultural conditions of the various forms of this section in this country agree more nearly with those of the various localities in which they grow.

To begin with this Moulmein form of *D. formosum*, the commonest of all the forms imported. I have frequently gone out on an elephant to the low-lying hills on the Amherst road, and gathered the plants that were within reach with very little trouble. These plants I invariably found growing under the same conditions, generally on the branches of the trees where they got abundance of light, heat, and moisture, frequently on the extreme tops of the trees, in full flower and fully exposed to the sun. Its rays had apparently no burning effect on them during the rains, and the flowers were as delicate and as firm as if no heavy rain had had a chance of dashing them to pieces. This firmness of the foliage and flowers I attribute

to the very airy position in which they grow, so that the great moisture caused by the heavy rain dries up quickly.

It is true that during the dry months, January, February, and March, the plants get much dried by exposure to the hot sun, and often lose their leaves, especially on the old stems, but the new growths continue to develop, nourished by the night dews, which in the neighbourhood of the sea are very heavy.

The season of rest this Orchid enjoys is very short, at most two months, January and February, and hence the difficulty we find in dealing with it in our glass-houses in England. It must also be remembered that this plant grows throughout the year, not only in a very hot atmosphere, but in a bright clear air, invariably charged with moisture.

Dendrobium formosum is widely distributed from the Khasia Hills down to Tavoy, but it is principally at Amherst, and along the coast between that place and Tavoy, that the variety grandiflorum is found.

Although the flowers of the Moulmein variety, the one that now invariably comes home, are larger than those of any other variety, they are not so perfect in shape as some of the more northern forms, which have smaller flowers.

For perfection of form, however, the variety found in the Andamans is much the best. This plant, sent home by me for the first time about 1881, was described by the late Prof. Reichenbach in the *Gardeners' Chronicle* as variety Berkeleyi. I first found this fine variety in great abundance at Casuarina Bay, South Andaman. The shape of the flower is more like that of D. infundibulum, the sepals and petals being in a perfect whorl and not with lax petals, as in the common Moulmein plant. This perfection of form adds great beauty to the plant, which is also distinguished by the exceedingly rich colour in the throat, at the base of the lip, which varies from rich orange to the brightest red. This variety is widely distributed throughout the group of islands composing the Andamans, and appears to like the sea air, as I have frequently found it growing on mangrove trees on the sea coast, unapproachable at high tide.

Growing with Dendrobium formosum in the neighbourhood of Moulmein, I also found, on several occasions, D. revolutum, another of the Nigro-hirsute group. This plant is rather like D. formosum in habit, but the internodes of the stem are much shorter and more swollen, and the flowers light buff and very flat. Growing on the same trees as D. formosum, this plant requires similar treatment. It is worth growing, as it is extremely distinct. This plant is also reported as growing in the Straits Settlements, but Mr. Ridley informs me that this is a mistake. It is not included in the list of Moulmein Dendrobiums in *Veitch's Manual*, but I never found it growing anywhere else but in the neighbourhood of Moulmein.

(*To be continued.*)

HYBRID ODONTOGLOSSUMS.

(*Continued from vol. i. page* 334.)

OUR last paper concluded the hybrids from the Bogota district, and we now come to those from the region about Ocaña, one of the great Odontoglossum centres. Here grow O. nobile (Pescatorei), O. triumphans, O. tripudians, O. blandum, and O. crocidipterum, together with O. luteopurpureum, O. gloriosum, and O. Lindleyanum, which are found also around Bogota.

The following diagram indicates the hybrids which are certainly known from this district. It serves, however, to emphasise the fact that O. × glorioso-luteopurpureum and O. × Lindleyano-luteopurpureum may also occur here.

O. luteopurpureum . .
.
O. Lindleyanum . . . .
. ×6
O. gloriosum . . . . ×7
×9 .
O. nobile . . . . . ×10
×8 .
O. triumphans . . . .
.
O. tripudians . . .

Besides these there are at least two others, which are believed to have come from this region, whose parentage remains doubtful, and these will be considered in their turn.

Odontoglossum nobile, Rchb. f., or O. Pescatorei, as it is usually called—though the former name has priority by four years, Reichenbach having originally described it in 1849, from dried specimens collected by Funck and Schlim two years previously—is a native of the north-west branches of the Eastern Cordillera, of New Granada, in the neighbourhood of Ocaña, from about 6,000 to 9,000 feet elevation, and is said to be spread over an area of about ninety square miles. Other species have been found growing upon the same trees with it; for example, O. triumphans, O. Lindleyanum, O. luteopurpureum, O. crocidipterum, and O. tripudians, and with the three former, at least, it readily hybridises, as we shall now see.

O. × LUTEOPURPUREO-NOBILE.—This hybrid originally appeared in 1880, but still seems to be very rare, and consequently less polymorphic than those previously considered. It is quite intermediate between the two parent species, both in shape and colour. The four following plants all appear to be forms of this hybrid, the second and third, however, I only know from description.

Odontoglossum × Horsmanii was collected at Ocaña by Mr. Fred Horsman, for the New Plant and Bulb Company, Colchester, and flowered in 1880. Reichenbach, in describing it, remarked, "There can be scarcely a doubt left that the present plant is a mule between O. Pescatorei and

luteopurpureum." It was compared with a middle-sized O. Pescatorei, the colour of the flowers being light whitish sulphur, blotched with cinnamon. The toothed petals and column-wings, together with the shape and crest of the lip, all show characters derived from O. luteopurpureum. The plant exhibited at a meeting of the Royal Horticultural Society on April 22nd, 1890, by H. M. Pollett, Esq., under the name of O. sceptrum album, is a form of O. × Horsmanii.

O. × lyroglossum was described in 1882, from an unknown English source, as "apparently a natural hybrid between O. nobile (Pescatorei) and O. luteopurpureum," and the description and figure subsequently published leave no room for doubt on the matter. It afterwards appeared with Dr. Wallace and others.

O. × brachypterum appeared in the establishment of Messrs. James Veitch and Sons, of Chelsea, in 1882. Reichenbach remarked, "It is quite like O. × Horsmanii, but has not the lamellæ on the lip which are found in O. Pescatorei." The flowers are light yellow, with a few cinnamon blotches. Reichenbach thought O. Lindleyanum might be one parent, but the broad segments, the shape and crest of the lip, and toothed column-wings all indicate rather O. luteopurpureum. O. × Kalbreyeri is mentioned at the same time, but I cannot find that it has ever been described, and nothing more seems to be known about it.

O. × ferrugineum appeared in the collection of Mr. E. Harvey, of Aigburth, Liverpool, in 1883. The sepals and petals are described as dark cinnamon, with yellow tips, the petals toothed, and the front of the lip dilatate, fimbriate, and whitish yellow, with a brown spot on the disc. O. luteopurpureum was clearly one parent, while the crest of the lip and column-wings suggest O. Pescatorei as the other. This, too, seems to have been lost sight of.

O. × majesticum appeared in the collection of M. Charles Vuylsteke, of Loochristi, Ghent, in 1891, and received a Certificate of Merit at the Ghent meeting in June. It is a very fine variety of O. × Horsmanii.

The following are the references to the forms of this hybrid :—

Odontoglossum × Horsmanii, Rchb. f. in *Gard. Chron.*, 1880, i. p. 41; *Veitch Man. Orch.*, i. p. 74; *Rolfe in Gard. Chron.*, 1890, i. p. 547.

O. × lyroglossum, Rchb. f. in *Flora*, 1882, p. 534; Rchb. f. in *Reichenbachia*, ser. 1, vol. i. p. 65, with figure.

O. × brachypterum, Rchb. f. in *Gard. Chron.*, 1882, ii. p. 552; *Veitch Man. Orch.*, i. p. 72.

O. × ferrugineum, Rchb. f. in *Gard. Chron.*, 1883, i. p. 814.

O. sceptrum album, *Gard. Chron.*, 1890, i. p. 526.

O. × majesticum, *Gard. Chron.*, 1891, i. p. 790.

ODONTOGLOSSUM LINDLEYANO-NOBILE.—This hybrid originally appeared in 1887, in the establishment of Messrs. F. Sander and Co., of St. Albans, and subsequently in other collections. It has many of the characters of O. Lindleyanum, but in the shape of the lip it approaches nearer to the

other parent, while the colour is about intermediate. Two forms of this hybrid have been described.

O. × stauroides appeared in the establishment of Messrs. F. Sander and Co., of St. Albans, and was mentioned by Reichenbach in a note, without any indication of its parentage. Shortly afterwards another form flowered in the same establishment, and was described as O. × stauroides var. Gravesianum, still without any indication of its parentage. I have seen it on several occasions and have no doubt it belongs here.

O. × elegantius appeared with Messrs. Hugh Low and Co., of Clapton, in 1888, and Mr. Hugh Low immediately recognised it as a natural hybrid between O. Pescatorei and O. Lindleyanum, as Reichenbach informs us. It is like the preceding in shape, the colour of the flowers being sulphur-yellow, with a few brown blotches.

The following are the references to this hybrid :—

O. × stauroides, Rchb. f. in *Gard. Chron.*, 1887, i. p. 200 (in note); Var. Gravesianum, Rchb. f., *l.c.*, 1887, ii. 7. 154.

O. × elegantius, Rchb. f. in *Gard. Chron.*, 1888, i. p. 200.

(*To be continued.*)

CYPRIPEDIUM SPECTABILE AND C. PUBESCENS AS POISONOUS PLANTS.

A paper "On the Poisonous Influence of Cypripedium spectabile and C. pubescens," by D. T. MacDougal, appears in Part I. of *Minnesota Botanical Studies*. In consequence of various unconfirmed reports that these two species were poisonous, the author determined to put the matter to the test. On September 7th last he met with several well-grown plants of C. spectabile, with newly formed seed-pods, and breaking off a robust specimen, the leaves were brushed lightly across the bared left arm. A slight tingling sensation was felt at the time, and fourteen hours later the arm was greatly swollen from the shoulder to the finger tips, and violently inflamed. Ten days of the most approved treatment were required to reduce it to its normal size, and the effects were perceptible a month later. The author observes that the severity of the test has prevented its repetition, and that he would have been satisfied of the poisonous influence of the plant with a much less pronounced result. On examination it was found that two forms of hairs were present in great abundance—one being pointed and easily broken off, the other gland-tipped, and both are infested with a filamentous fungus, though to what the poisonous effects are due is not precisely known. It is, however, suggested that these and other species of the genus are protected in a way that renders them unpleasant to grazing animals; and it has been repeatedly noticed that large numbers of these plants growing in woodland pastures have been found intact, while the surrounding herbage

would be very closely cropped. Attention was called to the subject by the circumstance that several persons had experienced unpleasant effects, analogous to that produced by Rhus poisoning, after gathering the plants. The author suspects that many persons might handle them without danger, but suggests that susceptible persons should proceed with some care, though the circumstance should not detract in the least from the use of these plants for ornamental or decorative purposes. "The subject," concludes the article, "derives additional interest at this place—the University of Minnesota—since the two species are widely distributed in the State, and the Cypripedium pubescens (the Mocassin flower) has been formally adopted as the 'State flower' of Minnesota."

THE HYBRIDIST.

DENDROBIUM × DORIS.

THIS is a chaste and very pretty hybrid, raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, from D. × Leechianum ♀ and D. moniliforme (japonicum) ♂. It bears much resemblance to D. × Cassiope in shape, but the sepals are longer, over one and a half inch long, and the lip has a light green disc with some light purple lines and a slight suffusion of the same colour on it. The rest of the flower is white. The difference between the two is easily accounted for, as D. × Leechianum replaces D. nobile as one parent, and thus one-fourth of D. aureum blood replaces the same amount of D. nobile. The influence of D. aureum is seen in the shape of the lip and the markings of the disc. It is a very promising thing, and is likely to prove very floriferous. Mr. Cookson already considers it an improvement on D. × Cassiope.

DENDROBIUM × EURYALUS.

This is a handsome hybrid, derived from Dendrobium × Ainsworthii ♀ and D. nobile ♂, for which Messrs. James Veitch and Sons received a First-class Certificate on March 27th last. And as D. × Ainsworthii is itself derived from D. aureum ♀ and D. nobile ♂, it is seen that the new hybrid has three-fourths blood of D. nobile in it. Under these circumstances it is not surprising that the characters of this parent should largely preponderate. A raceme just received bears four large flowers with the general shape of D. nobile. The sepals and petals are light rosy purple; the latter being an inch broad, and the lips one and a quarter inch broad; the large-feathered maroon blotch extending to within a line of the margin on the sides and within five lines at the tip, the remainder being light rosy purple. It is in this character of the lip that it most differs from D. nobile. It is certainly a very handsome thing.

Cypripedium × Wiganianum.

This is a very fine hybrid, now in the collection of F. Wigan, Esq., Clare Lawn, East Sheen, whose parentage is somewhat doubtful, though, judging from appearances, it may have been derived from C. × Harrisianum and C. Ashburtoniæ. It was purchased at Messrs. Protheroe and Morris's Sale Rooms without any account of its origin. The leaves are much like those of a very large C. barbatum, but six-tenths of an inch long by one and a quarter to two inches broad, and the scape stout a foot high and two-flowered. The flowers are five and three-quarter inches in diameter across the spreading petals. The dorsal sepal is ovate, somewhat twisted, two and three-quarter inches broad, light green, regularly nerved and reticulated with dull purple-brown and a few similar spots near the base, and a narrow white margin. The petals are seven-eighths of an inch broad, shining purple-brown, with numerous darker spots on the basal half, some being much smaller than others. The lip is deep purple-brown, two and one-eighth of a inch long; and the staminode three-quarters of an inch broad, with rounded teeth at the apex. It is a robust grower, and a decidedly handsome hybrid. It flowered late last autumn.

Cypripedium × Io-Spicerianum.

A pretty hybrid raised in the collection of W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. Robbins), from Cypripedium × Io grande crossed with the pollen of C. Spicerianum, in shape about intermediate between the parents. The basal part of the dorsal sepal is light green, the upper part white, and a narrow purple band extends along the central nerve. The petals are light green, with many small dusky spots near the base, but the large spots of the mother plant have quite vanished. The lip is about intermediate in shape and colour. The staminode is much like the mother plant in shape, but suffused with purple as in C. Spicerianum. It was exhibited at the Drill Hall, Westminster, on December 12th last, together with the two parents.

Cattleya × Arthuriana.

This is apparently the first hybrid from Cattleya luteola. It was raised in the collection of C. Dorman, Esq., Lawrie Park, Sydenham, about ten years ago, by Mr. W. H. White (now Orchid grower to Sir Trevor Lawrence, Bart.). C. Dormaniana was the seed parent. The plant is about intermediate in habit, and the flower two and a half inches in diameter. The sepals and petals are yellow, the front lobe and tips of the side lobes amethyst-purple, and the rest of the lip white. It is named after Mr. Dorman's son, the Rev. Arthur Dorman.—O'Brien in *Gard. Chron.*, Jan. 27th, p. 102.

Cypripedium × Pelias.

A vigorous-growing hybrid derived from Cypripedium Haynaldianum ♀ and C. insigne ♂. The scapes bear from one to three flowers, which are intermediate, both in shape and colour, between those of the two parents. The dorsal sepal is broader and more spotted than in C. Haynaldianum, the petals shorter and richer in colour, and the lip chestnut-brown, while the staminode is pale green with a darker raised disc. It flowered in the collection of H. Graves, Esq., Orange, N.J., in February, 1894.—Robert M. Grey.

Cypripedium × Anton Joly.

A beautiful hybrid raised in the collection of Baron N. von Rothschild, Hohe Warte, Vienna, by M. Anton Joly, from C. × vernixium ♀ and C. Spicerianum ♂. It is most like the former, but improved by the very characteristic upper sepal of the latter.—Kränzlin in *Gard. Chron.*, Feb. 17th, p. 198.

Cypripedium × Madame Jules Hye.

A noble and beautiful hybrid raised by M. Jules Hye-Leysen, of Coupure, Ghent, from C. Spicerianum superbum ♀ and C. tonsum ♂. Thus it would appear to be variety of C. × Celia (*supra*, i. pp. 327, 328).—O'Brien in *Gard. Chron.*, Feb. 17th, p. 198.

Cypripedium × Burtonii.

A handsome and richly coloured hybrid raised in the collection of F. M. Burton, Esq., of Highfield, Gainsborough. Its parentage is doubtful, though Cypripedium Lowii and C. Hookeræ are suggested as probable. The flower is something like C. × macropterum in shape, but the colours brighter.—Gower in *Orchid Album*, sub. t. 481.

Cattleya × Wendlandiana.

This is a beautiful hybrid raised by Messrs. James Veitch and Sons, of Chelsea, from Cattleya Bowringiana ♀ and C. Warscewiczii ♂, whose character it combines in a very charming way. The flowers are a great improvement of those of the mother plant, to which they bear much resemblance, but the lip is much more expanded, and bears a pair of yellow blotches in the throat, as in the pollen parent. The brilliant rosy purple of the two parents is naturally reproduced in the hybrid, which flowered for the first time in the autumn of 1890. C. Bowringiana is both free growing and very floriferous, and the hybrid is likely to show the same character. It is a very promising plant, and is dedicated to Herr Wendland, of Herringhausen.

CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.

THE beautiful plant which we have now the pleasure of figuring flowered in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire, in January last, when the photograph here reproduced was taken, which represents the plant slightly under two-thirds natural size. The following interesting note was also communicated by Mr. Wrigley :—

"I have now in flower a very fine bloom of the above-named Cypripedium, of which a description may interest your readers. The bloom measures three inches from tip to tip of the petals, and two and a quarter inches from the apex of the dorsal sepal to the lowest part of the pouch. The greatest width of the petals is one and three-eighth inches, and the dorsal sepal measures one and a half inches across its widest part. All these measure-

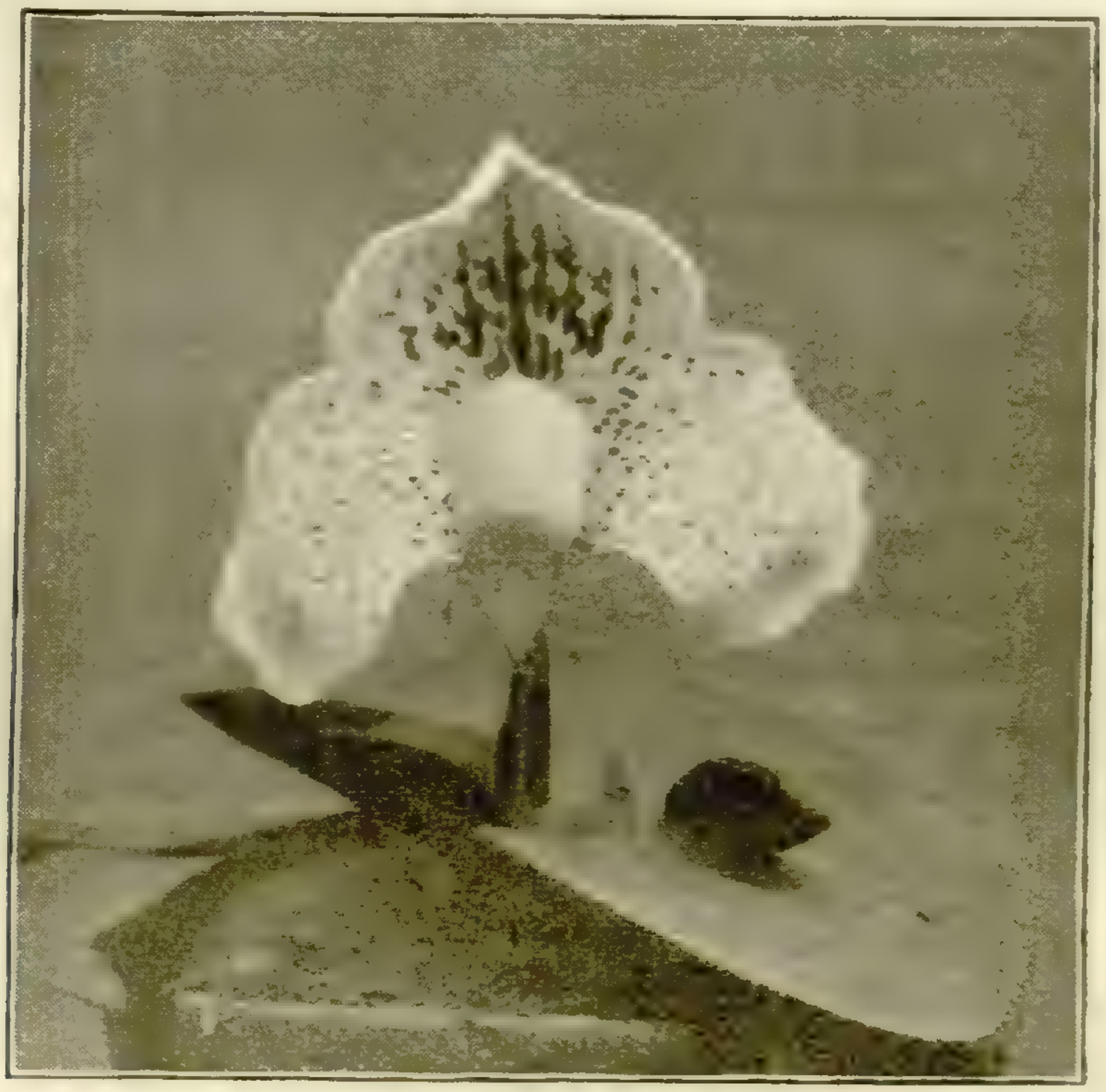

Fig. 16. CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.

ments have been carefully taken with a compass, and were verified by my gardener. The colouring of the flower is beautiful, and its markings distinct, the dorsal sepal being white, heavily blotched with dark purple, the petals similar, with smaller purple spots, while the lip bears out its name by being pure white, without a single spot. The petals are somewhat reflexed, but the dorsal sepal is incurved at the apex.

"This plant was purchased, as an imported piece, at one of Messrs. Protheroe and Morris's Auction Sales, in August, 1892, so that it has been established, and bloomed in seventeen months from the date of importation. Considering that this is the first bloom on an imported piece, it is possible that, when the plant grows strong, the flower may be still larger.

"I may remark that I am successfully cultivating all the Cypripedia of this section, and attribute my success entirely to careful watering, and proper attention to atmospheric surroundings. I possess upwards of one hundred plants, all of which are healthy and increasing in size. All my plants are potted with limestone, in place of crocks, with which stone the pot is completely filled, so that the roots can run about as on their native rocks. The merest atom of fibrous loam is wedged between the stones on the top of the pot, in order to keep them firm when the plant is dipped. The winter temperature of the house in which they are growing is, maximum by day, 65° Fahr., and minimum by night, 60°, by pipe heat. In summer we allow a rise of 5° with pipe heat, and higher still through the influence of the sun."

The plant is certainly the picture of health, but we should attribute a fair share of the success attained to the use of the limestone. Some people, we know, say that the addition of limestone is unnecessary, but it must be borne in mind that lime is sometimes present in the loam used. We have seen them growing under both conditions, the result being much in favour of the use of limestone. It is not likely that they would grow so persistently upon limestone rocks in a wild state were it not beneficial to them. And while upon the subject we would suggest to our readers the advisability of trying the effect of adding a little limestone to the compost of the Bornean Cypripedium Sanderianum. Few people succeed with it, and we believe that it grows in a district where limestone is found. Whether it grows actually upon limestone we are not sure, but the experiment is worth trying, and, in any case, little harm could result. We may add, in conclusion, that last year we received a fine flower of C. Godefroyæ leucochilum from R. H. Measures, Esq., The Woodlands, Streatham. It is certainly a very charming thing.

CYCNOCHES PENTADACTYLON.

Mr. E. S. Rand, of Pará, contributes an interesting note to the *Journal des Orchidées* (iv., p. 378) respecting this plant, which was figured in our last volume (p. 73, fig. 4). It is a native of the Upper Amazon, and is abundant round Teffé, though rarely of large size. A giant form, however, occurs at the upper part of the River Purus, whose pseudobulbs reach a height of three feet, whose racemes are two feet long, and bear from one hundred to two hundred flowers—all of them males. They are generally borne near the apex of the pseudobulb, and the females near the base; very rarely the two occur on the same inflorescence. The proportion of male to female flowers is enormous, being several thousands to one. Only two or rarely three flowers are borne on the female racemes. The flowers are very fragrant, having a strong vanilla-like perfume.

DO CYPRIPEDIUMS SPORT?

At page 20 of our January issue we gave some particulars about Cypripedium × Dauthieri and its remarkable sports; among them the one known as C. × Dauthieri, The Albino, in the collection of R. H. Measures, Esq., The Woodlands, Streatham. Shortly afterwards Mr. Measures sent a flower, which was practically identical with that called C. × Dauthieri var. Poggio Gherardo—the flower a peculiar light green with a little bronzy suffusion on the petals. And now the same gentleman sends a very different flower from the same plant, and still further illustrates its sportive character. Mr. Measures writes:—"You will recollect my sending you a flower of Cypripedium × Dauthieri, The Albino. Well, the growth which bore that flower was divided from the plant and grown on simply by itself, and it now has two other growths which have sprung from it, one bearing the flower now sent." This is the form, irregularly striped and splashed with purple on the dorsal sepal, petals, and lip, to which the name of Rossianum was given by Reichenbach. Even the staminode bears a few small streaks and splashes of purple. Thus it differs from the one in the collection of Mr. Ross in not being constant in its mode of flowering. It is a most remarkable phenomenon, and so far as known, unique in the genus. The peculiarity may arise from a partial re-separation of the mixed blood of the parent species, coupled with a tendency to reversion to a more ancestral condition, for the group to which C. barbatum belongs is undoubtedly more highly specialised than that which contains C. villosum. This much may be said, though how far one would have to trace them back before reaching their common ancestor, and what it would be like, are matters of speculation. The element of uncertainty as to the behaviour of this plant lends it an additional interest, as cultivators may literally be said not to know where they are.

SACCOLABIUM MOOREANUM VAR. CANDIDULUM.

Saccolabium Mooreanum was introduced a short time ago by Messrs. F. Sander and Co., of St. Albans. It was reported from New Guinea, though now it is said to have come from Sumatra. It is characterised by its dense racemes of small rosy flowers, whose segments are tipped with green. It has been distributed into several collections. It is interesting to note that a white variety has now appeared among importations of the same firm. It is simply an albino of the species, the rose colour being replaced by white, as it agrees with the typical form in every other respect. It is probably rare.

Saccolabium Mooreanum, Rolfe, in *Kew Bulletin*, 1893, p. 64; *Orchid Review* i. p. 178.

CYRTOPODIUM VIRESCENS.

Two species of Cyrtopodium are pretty well known in gardens, namely, C. punctatum (Saintlegerianum) and C. Andersonianum (cardiochilum), besides which a new species, C. Aliciæ, has recently appeared. Several others are known from dried specimens and drawings, and one of them, a native of Brazil, has now been imported by Messrs. F. Sander and Co., of St. Albans, with whom it has recently flowered. The flowers are rather smaller than those of the two species first named, and the plant considerably dwarfer. The sepals and petals are greenish yellow, spotted with red-brown, and the lip a little brighter in colour, with purple side-lobes. It was originally discovered in the neighbourhood of Lagoa Santa, and flowers during the autumn.

Cyrtopodium virescens, Rchb. f. and Warm. in *Otia Bot. Hamb.* (1881), p. 89; Warm. in *Kjobenh. Vidensk. Meddel*, 1884–86, p. 88, t. 7, fig. 4.

R. A. R.

CALENDAR OF OPERATIONS FOR MAY.

By H. A. Burberry, Highbury, Moor Green, Birmingham.

This will be a busy month. All species of Orchids are in active growth, and must be assisted by all possible means, making the most of this and the following three months to complete the building up of strong pseudo-bulbs. Constant attention is necessary, or the plants may receive a check which they may not be able to recover from for some time.

Cool-house Orchids are easily injured by heat, and must now be kept as cool as possible. Should the outside conditions be hot or very dry, it is best to use the top ventilation with discretion during the heat of the day, but taking care to use them freely during the night. The temperature must be kept down in the daytime by heavily shading, removing the same when the sun has lost its power in the evening, and by a frequent use of the hose-pipe, thoroughly damping down every available space. Lattice-work blinds raised a few inches from the glass has the advantage of keeping the house much cooler than "stuff" blinds. No plant in this department must suffer from drought, but should not be kept in a sodden condition. A slight spraying overhead may be given with advantage after a day's warm sun, but soft water must be used.

I am of the opinion that Cattleyas and Lælias are frequently denied sufficient heat during the growing season. It is then that these species delight in a liberal treatment, and an abundance of moisture must be given in the atmosphere, and the plants themselves well watered. It is necessary to shade many of them from the scorching rays of the sun, as stated in

previous Calendars, though as much light should be given them as possible. Sun heat is very beneficial at this period if well tempered with free and unstinted ventilation. The blinds should be drawn up early in the afternoon, the house thoroughly damped down, the plants slightly sprayed overhead with soft water, and the ventilation reduced according to the weather. If mild, it is best to leave some air on all night, as cool nights and hot days is the natural order in their native habitats.

For the warm houses a little fire heat will still be required during the night, and perhaps also by day; and should the weather be cold and unseasonable, a little may also be used with advantage in the intermediate houses. Keep a sharp look out for thrips and other insect pests, preventing their increase by timely fumigation. When using insecticide beware of having it too strong, and on no account should any be allowed to lodge in the young tender growths, as it is extremely dangerous, and quite unnecessary, as a dusting of tobacco powder is safe to use and very effectual in dislodging thrips from such places where smoke cannot reach them.

Heat and moisture are quite indispensable for Dendrobiums and other East Indian Orchids. The former should now be in active growth, and all necessary work in the way of repotting or top dressing finished. Ours, except where the plants are too large, are suspended near to the roof glass, where they receive the greatest amount of light and a free circulation of air. As a general rule I find it safest not to syringe these Orchids, for where many different and choice species are growing together it is quite easy to have misfortunes, by the rotting of young growths, or the sudden termination of the new pseudobulb, caused by the water lodging in them. The atmosphere, however, cannot be kept too moist if the shading and ventilators are properly manipulated. It is a genuine pleasure to the cultivator to see his plants nicely arranged in their growing quarters, and looking healthy and comfortable in a warm, moist, and well-balanced temperature.

Many species of Orchids luxuriate under exactly the same conditions as Dendrobiums, and if the house is large enough may be placed with them. I mean such species as delight in heat if coupled with light and air, the last-named conditions being quite as essential as the first. Amongst these are the deciduous Calanthes, the Cattleyas named in the last Calendar, Coryanthes, Cyrtopodiums, Chysis, and Spathoglottis, also Catasetums, Mormodes, and Cycnoches, which should be placed in a light airy position. Vanda teres should be grown in full sunlight, if possible, and kept well syringed, also Vanda Hookeriana. While on the stages or in some shady place, should such exist, will grow the usual class of East Indian Orchids, such as Phalænopses, Saccolabiums, Aërides, Cypripediums, also Angræcums, Pescatoreas, Bolleas, and others.

Some of the Oncidiums also grow well in heat, as O. carthaginense, O.

Cavendishianum, O. Lanceanum, O. Papilio, O. Kramerianum, and O. splendidum, and this should be suspended in a very light position. I think this may apply generally to Oncidiums having thick fleshy leaves, as they like plenty of light, and in many cases actual sunlight. Oncidium Jonesianum is remarkable for its very rapid deterioration. The first few importations vanished almost as quickly as they appeared, and the secret of successful cultivation has still to be learnt. From my experience I believe that heat and strong light are necessary during growth, the plant afterwards being rested in a dry intermediate temperature.

New live compost should be applied to its roots each year, or if grown on a block, which seems to be most natural, as it always grows downwards, like Cattleya citrina, it should be transferred to a new green block each year. Most of the Oncidiums, however, like the coolest house, and delight in the same treatment as Odontoglossums; and among the cool-growing Oncidiums may be mentioned the following, all of which are well worth growing:—O. concolor, O. curtum, O. Forbesii, O. crispum, O. cucullatum, O. dasytyle, O. Garderi, O. Marshallianum, O. varicosum, and O. cheirophorum. All these should be grown in small pans or baskets and suspended from the roof. The last-named species succeeds best if removed to the intermediate house for the winter. O. tigrinum, O. macranthum, and O. superbiens are best grown in pots on the stages. O. ornithorrhynchum, O. unguiculatum, O. incurvum, and O. Leopoldi grow well in the cool house in the summer, but are best removed to a warmer house for the winter, and this remark applies to most of the intermediate growing Oncidiums and Odontoglossums.

Odontoglossum Cervantesii is a charming little Orchid when grown in small hanging pans, and, like O. Rossii, must be placed at the coolest end of the house. In fact, most of the Odontoglossums are very cool-growing Orchids; but there are exceptions, some few of them requiring intermediate temperature, as O. Harryanum and O. cirrhosum. This latter is one of the most handsome, but it is not one of the easiest to grow. O. Œrstedii also requires some warmth to grow it well, as do O. Reichenheimii, O. Schleiperianum, O. Williamsianum, O. grande, O. Insleayi, and O. citrosmum, which are best left in the intermediate house. O. Londesboroughianum should be given a position close to a ventilator in the Mexican house where it gets full sunshine.

When writing of Miltonias, I omitted to mention that exceedingly pretty species, M. Phalænopsis, which is now in bloom. It should be grown in pans or baskets and suspended in the intermediate house during summer. I have grown it well in the cool house, but advise a little warmer treatment. In the winter it should occupy a position in the warmest part of the intermediate house, otherwise it will not bloom satisfactorily, and the foliage will become spotted.

Trichopilias are interesting Orchids, but if treated too cold do not grow

well, and are subject to a disease in the form of black marks in the leaves and pseudobulbs. They like a well-ventilated, light, and airy situation, such as that of the Cattleya house.

Cypripediums are now growing apace, and where the compost and roots are in healthy condition will delight in an abundance of water. Orchids always grow well when the water passes away freely through the drainage. If this is not the case, something is wrong, and beware then of over-watering. Cypripedium Schlimii is an exquisite little beauty, though sometimes difficult to grow, until a position is found that suits its requirements. It should be placed in a light and airy part of the cool house during summer, but be removed to a similar position in the intermediate house for the winter, taking care that actual sunshine does not strike it. C. spectabile and other hardy species, when grown in pots, should be plunged in a bed of leaves in the open air, and kept well watered during the summer. Sandy peat should be used.

Lycaste Deppei and L. aromatica, if the plants have been rested in a light and dry position, will be pushing forth numerous flower buds from around the base of the new growth. These species do not require frequent disturbance at the roots, but when they require it are best repotted at this stage, for, like Anguloas, if left until blooming is over the new growth, then far advanced, is greatly checked.

Cymbidiums should be repotted, if they require it, when the plants pass out of bloom. An intermediate temperature suits them best. I have seen equally good results when the plants were grown in all lumpy peat, not necessarily very fibrous, as when grown in all fibrous loam. A mixture of these two materials, with coarse sand and broken nodules of charcoal to keep the whole open, is a good and safe compost to use. As they make a large quantity of fleshy roots, the pots should not be too small, and should only be about a quarter filled with drainage. They should be watered like an ordinary stove or greenhouse plant, by simply giving them a good soaking when they become dry.

The repotting of Cattleyas and other Orchids must be pushed on briskly as they come out of flower. Cattleya labiata, C. Harrisoniæ, and the Cattleya guttata varieties should now receive attention. Pot in good fibrous peat, broken up into lumpy pieces and mixed with the same quantity of fresh sphagnum moss. The pots should be drained about half full with crocks and charcoal, press the compost moderately firm, and place the leading pseudobulbs so that the rim of the pot is not reached for two years, leaving the surface of the compost slightly raised above the rim. Previous to repotting, all the old compost and crocks must be carefully removed, it being exceedingly bad practice to insert the old pot or basket within a new one. Keep the plants shaded and moist for a few weeks, but be careful not to supply large quantities of water until renewed activity has set in.

Seedlings should be pricked off, or potted on, without further delay, in order that they may have a long season of growth. When a pod of seed is ripe enough for sowing, which can be known by its beginning to split, the contents should be shaken on the surface of an Orchid having had new material recently given. Seeds germinate and grow much more freely when sown on pans or baskets which are suspended. With the exception of Cypripediums, they rarely come up if sown on pots on the side stages, unless near the glass.

The question whether manure is good for Orchids is one which frequently occurs to amateurs. I would advise them to be cautious, remembering that Orchids are easily ruined, though perhaps difficult to kill. A favourite maxim of one of the most successful Orchid growers the present generation has seen was, "Orchids are the easiest of all plants to keep, but the most difficult to grow," though he succeeded in growing most species well enough, having then the best grown collection of Orchids in England, and to his practice and writings much of the present successful cultivation can be traced. I allude to the late Mr. J. C. Spyers. But manure was not much used by him. An abundant supply of fresh water and the admission of pure air were his chief stimulants. But it is a well-known fact that a few species are benefited by the use of stimulants, such as those mentioned in the last Calendar, though, as a general rule, I do not advise its use. I think I have noticed that some species of Dendrobium are to some extent assisted by manure for the first year of its application, but the following year a collapse has taken place, and no manure in the world would restore that plant to a healthy state again.

A few degrees increase in temperature may be allowed, in all the houses, to the figures given last month, in accordance with the increase in the outside conditions. Keep a sharp look out for the Cattleya fly (see February number), also for the Dendrobium beetle, and other noxious insect pests.

ORCHID PORTRAITS.

CATASETUM RODIGASIANUM, Rolfe, VAR. TENEBROSUM. A dark variety.—*Lindenia*, t. 406.

CHONDRORHYNCHA CHESTERTONI, Rchb. f. A handsome and very remarkable species, originally introduced by Messrs. F. Sander and Co., St. Albans, in 1879, and now re-introduced by Messrs. Linden, L'Horticulture Internationale, Brussels. It has light buff-yellow flowers, with fringed lip and petals.—*Lindenia*, t. 405.

CHYSIS BRACTESCENS.—*Journ. Hort.*, April 5th, pp. 222, 223, fig. 43.

CŒLOGYNE CRISTATA. Specimen plants grown by Mr. Robert, gr. to Sir David Solomon, Bart., Tunbridge Wells.—*Gard. World*, April 21st, p. 533.

CŒLOGYNE CRISTATA LEMONIANA. A fine specimen over four feet across, bearing more than five hundred flowers, grown by Mr. Bailey, gr. to Mrs. Barclay, The Briars, Reigate.—*Gard. World*, March 24th, p. 469, with fig.

CŒLOGYNE MOSSIÆ, Rolfe. A handsome new species from the Neilgherry Hills, which was exhibited at a meeting of the Royal Horticultural Society by John S. Moss, Esq., Wintershill, Bishops Waltham, on March 13th last, and awarded a First-class Certificate. The flowers are white with a crescent-shaped yellow marking in front of the keels.—*Gard. Chron.*, March 31st, pp. 400, 401, fig. 49.

CYPRIPEDIUM × CONCO-LAWRE.—*Lindenia*, t. 408.

CYPRIPEDIUM × LAWREBEL.—*Lindenia*, t. 407.

CYPRIPEDIUM × WINIFRED HOLLINGTON. A very beautiful hybrid raised in the collection of A. J. Hollington, Esq., Forty Hill, Enfield, from C. niveum and C. callosum or C. ciliolare (both have been stated).—*Gard. Chron.*, April 21st, p. 495, fig. 60; *Journ. Hort.*, April 19th, pp. 294, 295, fig. 48; *Gard. Mag.*, April 21st, pp. 218, 222, with fig.

LÆLIA × CALLISTOGLOSSA.—*Gard. World*, April 7th, p. 501, with fig.

LÆLIA × FINCKENIANA (See p. 9, fig. 1 of our February issue).—*Gard. Mag.*, March 31st, p. 176, with fig.

MASDEVALLIA GARGANTUA, Rchb. f. A remarkable species allied to M. Mooreana and M. elephanticeps. It was exhibited by Sir Trevor Lawrence at the Royal Horticultural Society's Meeting on March 13th last, and received a First-class Certificate.—*Gard. Mag.*, March 24th, p. 161, with fig.

ODONTOGLOSSUM CRISPUM VAR. APIATUM. A flower of the splendid specimen for which Baron Schröder received a special Gold Medal on March 13th last.—*Gard. Chron.*, March 24th, p. 375, fig. 47.

ODONTOGLOSSUM × ELEGANS, SANDER'S VAR. A beautiful variety which received an Award of Merit from the Royal Horticultural Society on March 24th last.—*Gard. Chron.*, April 7th, p. 441, fig. 55.

ONCIDIUM LUCASIANUM. A handsome Oncidium with golden-yellow flowers for which Messrs. F. Sander and Co., St. Albans, received an Award of Merit on April 10th last.—*Gard. Chron.*, April 21st, p. 497, fig. 61.

PHAIUS × MARTHÆ. A handsome hybrid raised in the establishment of Messrs. F. Sander and Co., from Phaius Blumei ♀ and P. tuberculosus ♂. —*Journ. Hort.*, March 22nd, p. 219, fig. 36.

CULTURE OF MASDEVALLIAS.

IN the article on the Cambridge Lodge Collection in the ORCHID REVIEW for March, the following account is given of the treatment of the Masdevallias:—

"During the winter a temperature of 50° is maintained as nearly as

possible, with a minimum of 45° in extreme weather; but Mr. Chapman considers that so low a temperature, except for a very short period, is very risky, unless the plants are comparatively dry. . . . A plant of M. ignea was already pushing up well, and a large M. racemosa with eighty leaves is one of the healthiest we have ever seen."

May I be permitted to contrast with this the treatment followed in my modest collection during the last twelve months?

All the Masdevallias of the cool section were grown in the open air from May 27th to October 6th following, when they were transferred to the cool house, where the night temperature during winter sank to about 40°, on one occasion falling to 36°. The plants are all in perfect health and vigour; and taking the two kinds named in your article, Masdevallias ignea Massangeana, has been flowering strongly since January 8th, and will probably continue flowering until the end of June, and a plant of M. racemosa, which I obtained from the Maplewell Collection in December 1892, with sixty-five leaves and twelve growths, has now one hundred and thirty-five leaves and nine growths, the leaves having more than doubled in size during the period in which I have had the plant.

The Acacias, Worthing. C. B. Lucie-Smith.

[We are much obliged for this interesting note, as a discussion of the conditions under which these interesting plants succeed best in cultivation can only do good. They sometimes get into a bad state of health, when the leaves seem to damp off at the base, but whether this is due to the combined influence of too much water with too low a temperature is perhaps not proved, though it is what Mr. Chapman seeks to guard against. An impure atmosphere is highly prejudicial to their welfare, and we have heard it asserted that they cannot be grown to perfection in the area most affected by London fogs, though Mr. Measures' plants almost serve to dispel the idea. They are essentially Alpine plants, and grow naturally in cool, moist, and airy situations, generally occurring at a higher elevation than the Odontoglossums, and above the limits of the forest. In Peru they generally occur between 9,500 and 13,000 feet altitude, and in New Granada from 6,000 to 11,000 feet. About Sonson the species are numerous and occur from 6,000 to about 7,500 feet. M. Chimæra and its allies grow from 4,500 to about 6,500 feet elevation, and, with a few other species from a somewhat warmer climate, require a little warmer house during the winter months. Some of the species grow near the snow line, where temperature sometimes falls to near freezing point, and where mists and even fogs are frequent, though not accompanied by smoke and deleterious gases as in the case of London fogs. Rain is frequent and the atmosphere nearly always charged with moisture. These facts should be borne in mind, as they afford the safest guide to the cultivator.—Ed.]

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

AT the Royal Horticultural Society's Flower Show in the Drill Hall, James Street, Victoria Street, Westminster, on March 27th, there was a very fair display of Orchids.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), was awarded a Silver Flora Medal for a charming collection in which Dendrobiums were prominent, among them being the white and deep magenta D. superbum Huttoni, which received a First-class Certificate, the wholly white D. s. Burkei, D. Tattonianum, D. × cheltenhamense (D. aureum ♀ × D. luteolum ♂), and the deep purple D. × Wardiano-nobile. Other noteworthy objects were Eria aëridostachya with drooping racemes, and what was named Maxillaria Lawrenceana, with slender bulbiferous stems, and pale primrose flowers, each of these plants receiving a Botanical Certificate. A fine spike of Odontoglossum coronarium miniatum must also be mentioned.

E. Ashworth, Esq., F.R.H.S., Harefield Hall, Wilmslow, Cheshire (gr. Mr. H. Holbrook), exhibited his variety of Dendrobium Findlayanum, in which the sepals and petals were pure white, the lip having a pale yellow disc.

John T. Bennett-Poë, Esq., F.R.H.S., Holmwood, Cheshunt, exhibited a superb form of Cypripedium Boxallii.

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray), exhibited and obtained a Cultural Commendation for Dendrobium × Venus, a hybrid with vivid purple flowers in which the lip is conspicuously enlarged.

Sir John Edwards-Moss, Bart., F.R.H.S., Thamesfield, Henley-on-Thames (gr. Mr. G. Hatch), obtained a Cultural Commendation for a specimen plant of Selenipedium caudatum bearing eighteen flowers on seven spikes. In addition was a plant of Odontoglossum × baphicanthum with yellow flowers streaked with brown.

Mrs. Haselfoot, Moor Hill, Southampton (gr. Mr. Blandford), sent a fine blooming stem of Dendrobium Wardianum.

A Bronze Banksian Medal was awarded to Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., for a collection in which were chiefly noticeable Vanda tricolor, Lewis's var., Oncidium superbiens, several Odontoglossums, Ada aurantiaca, and a Cypripedium × Smithii, which has a large quantity of C. Lawrenceanum blood in its veins.

Messrs. Linden, Parc Leopold, Brussels, exhibited a two-flowered scape of Cypripedium × Lucianianum.

Messrs. Hugh Low and Co., Upper Clapton, N.E., exhibited several

Miltonia Roezlii, Cattleya Trianæ, Odontoglossum cristatum, and Cypripedium × J. Gurney Fowler (C. Godefroyæ ♀ × C. barbatum ♂), which latter had the upper sepal white, flushed with rose and spotted with deep purple.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), exhibited several improved forms of Vanda tricolor, and the buff Masdevallia × Hincksiana.

From Lord Rothschild's collection, Tring Park (gr. Mr. E. Hill), came a beautiful spike of Cattleya amethystoglossa, with fourteen flowers.

A Silver Flora Medal was granted to Messrs. F. Sander and Co. for a group including several varieties of Dendrobium Phalænopsis, Cœlogyne Dayana, Odontoglossum niveum, O. × elegans, Sander's var. (which received an Award of Merit), Angræcum Sanderianum, Cypripedium Rothschildianum, Phaius Sanderianus, and Spathoglottis aurea.

Messrs. E. D. Shuttleworth and Co., Peckham Rye, exhibited a charming variety of Odontoglossum × Andersonianum.

A Silver Flora Medal was awarded to Baron Schröder, F.R.H.S., The Dell, near Staines (gr. Mr. H. Ballantine), for a collection of Odontoglossums, including several natural hybrids from O. crispum, also O. c. apiatum, O. c. Schrœderianum, and O. Pescatorei Schrœderianum, O. × Wilckeanum, and O. × W. Godefroyæ, a larger and more heavily blotched form. Mention must also be made of Cattleya Lueddemanniana Schrœderiana with pure white segments, and tubular lip with a bright yellow blotch on each side of the deep magenta-purple which decorated the front portion. Miltonia Warscewiczii and its variety alba, as well as the rich orange Lælia × vitellina, were also shown.

T. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited Odontoglossum × Jenningsianum and the new hybrid Dendrobium × Rolfeæ, which exhibits in a conspicuous degree the traces of its parents—D. primulinum ♀ and D. nobile ♂.

W. Thompson, Esq., F.R.H.S., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), sent Cypripedium Boxallii, Dendrobium Wardianum purpureum, Odontoglossum triumphans, O. crispum, O. × cuspidatum, and the Walton Grange variety—a very fine one—of O. luteopurpureum sceptrum which received an Award of Merit.

Messrs. J. Veitch and Sons, King's Road, Chelsea, obtained a First-class Certificate for the deep purple Dendrobium × Euryalus (D. × Ainsworthii ♀ × D. nobile ♂), and also exhibited Phalænopsis × F. L. Ames (P. amabilis ♀ × P. intermedia ♂), Epidendrum × Endresio-Wallisii, which becomes darker in colour, Cymbidium × eburneo-Lowianum, Calanthe striata, and Cypripedium × Adrastus var.

Walter C. Walker, Esq., F.R.H.S., Winchmore Hill (gr. Mr. Cragg), received a First-class Certificate for Chysis bractescens, a vigorous specimen

of which with a mass of wax-like flowers was grown on a piece of a tree stem.

F. Wigan, Esq., F.R.H.S., Clare Lawn, East Sheen (gr. Mr. W. H. Young), exhibited Phalænopsis Schilleriana vestalis, with pure white flowers tinged with yellow on the crest.

A Silver Banksian Medal was awarded to Messrs. B. S. Williams and Son, Upper Holloway, for several forms of Cœlogyne cristata, Odontoglossum prionopetalum, Cypripedium × Morganiæ, C. × Peetersianum, which looks like a pale C. × selligerum, C. × Fitchianum (C. venustum ♀ × C. Hookeræ ♂), Oncidium Kramerianum, &c.

E. G. Wrigley, Esq., Victoria House, Dukinfield (gr. Mr. G. Tibbs), exhibited Dendrobium × melanodiscus, D. nobile Cypheri, and D. × Rolfeæ, somewhat less strong than Mr. Statter's plant of the same.

The Show on April 10th surpassed anything that has taken place hitherto on any ordinary meeting day, and the Drill Hall was full of visitors the whole afternoon.

Sir Trevor Lawrence, Bart., took a Silver Flora Medal for an excellent group, in which Eulophiella Elizabethæ, about which so much romance has been written, appeared. The plant bore two arching racemes of waxy flowers, and obtained a First-class Certificate; as did also the large-flowered Dendrobium giganteum. The yellow D. capillipes received an Award of Merit, a Botanical Certificate went to the white Eria floribunda, and to Leptotes bicolor, while a strong specimen of Epidendrum atropurpureum and Masdevallia Arminii each received a Cultural Commendation.

Norman C. Cookson, Esq., Wylam-on-Tyne, exhibited a grand plant of Cœlogyne ocellata maxima, which was also Culturally Commended.

Earl Cowper, Panshanger (gr. Mr. J. Fitt), contributed Odontoglossum crispum and O. × Wilckeanum.

De Barri Crawshay, Esq., Rosefield, Sevenoaks, exhibited his variety of Odontoglossum × Andersonianum, which secured an Award of Merit.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterson), exhibited a new species of Epidendrum—E. Ellisii, Rolfe—with reddish purple flowers, which received a First-class Certificate. Spikes of Lælia Boothiana obtained an Award of Merit, while a good example of Chysis bractescens, and Odontoglossum × Andersonianum were also exhibited.

Messrs. Collins and Collins, Cumberland Park, Willesden, obtained a Silver Banksian Medal for a collection of large Cymbidium Lowianum, and a batch of Cypripedium hirsutissimum, Vandas, &c.

A fine variety of Cattleya Mendelii with four flowers came from the Crystal Palace Co. (gr. Mr. Head).

A magnificent hybrid Cypripedium named Winifred Hollington (C. ciliolare ♀ × C. niveum ♂) was exhibited by A. J. Hollington, Esq., Forty

Hill, Enfield (gr. Mr. Ayling), and obtained a First-class Certificate. The flower is very large, of a beautiful purple-rose colour, dotted all over with deep purple, the petals being distinctly veined, and the large transversely oblong staminode very conspicuously hairy.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), exhibited a plant of the new Oncidium Lucasianum, which secured an Award of Merit.

A Silver Flora Medal was won by Messrs. H. Low and Co., Clapton, for a group containing several rarities. The beautiful purple Aërides Hughii obtained an Award of Merit. In addition to this was the beautiful natural hybrid Phalænopsis Schilleriano-gloriosa, P. × casta, the new Dendrobium Hildebrandii, Rolfe, and several Cypripediums and Miltonias.

Messrs. Lewis and Co., Southgate, received a Silver Banksian Medal for a collection in which were fine examples of Cœlogyne Massangeana, Cattleya Mendelii, C. Trianæ, Oncidium superbiens, O. Harrisonianum, Vandas, Cymbidiums, &c.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. Paterson), exhibited good forms of Cypripedium Rothschildianum, C. Schröderæ splendens, Odontoglossum cirrhosum Klabochorum, Dendrobium crassinode album, and D. Johannis—the latter receiving the distinction of a Botanical Certificate.

R. I. Measures, Esq., Camberwell (gr. Mr. Chapman), obtained a similar Medal for a group consisting mainly of Cypripediums. Of these the rare C. Mastersianum, with a large, bold brownish purple flower, obtained an Award of Merit. Botanical Certificates were granted to the tiny flowered Masdevallia simula and Pleurothallis ornata.

Mr. P. McArthur, Maida Vale, London, W., won a Silver Banksian Medal for a collection made up of Cypripedium Chamberlainianum, C. exul amænum, Cymbidium Lowianum, Miltonia Roezli, and several Dendrobiums.

F. W. Moore, Esq., Botanic Gardens, Glasnevin, sent Satyrium coriifolium, S. princeps, and Masdevallia torta, each of which received a Botanical Certificate.

Strong spikes of Cypripedium Rothschildianum came from the Duke of Marlborough, Woodstock, Blenheim (gr. Mr. Whillans).

A First-class Certificate was granted to a fine form of Dendrobium crepidatum shown by Lord Rothschild, Tring Park (gr. Mr. Hill).

Messrs. F. Sander and Co., St. Albans, obtained a Silver Flora Medal for a group consisting of Oncidiums (including the new O. Lucasianum, which received an Award of Merit), Brassia Wageneri, Cymbidium Lowianum, Cœlogyne Dayana, Cattleya Schrœderæ, Well's var., a fine specimen of Grammatophyllum Measuresianum, etc.

A Silver Flora Medal was awarded to Baron Schröder, The Dell, Staines

(gr. Mr. Ballantine), for several fine natural hybrid Odontoglossums, Cattleya Lawrenceana Vinckei, C. L. concolor, and C. L. Hyeanum.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), obtained an Award of Merit for Lycaste cruenta. Dendrobium tetragonum and Cyrtopodium Andersonianum were also shown—the latter under the erroneous name of C. Godseffianum.

A fine form of Odontoglossum × Wilckeanum came from Thos. Statter, Esq., Whitefield, Manchester.

Messrs. J. Veitch and Sons, King's Road, Chelsea, obtained an Award of Merit for Dendrobium × Alcippe (D. lituiflorum Freemanni ♀ × D. Wardianum ♂)—a hybrid with deep purple flowers, the lip having a pure white zone around the disc. Other noteworthy hybrids were Cypripedium × Merops (C. ciliolare ♀ × C. Druryi ♂), pale buff, with red-brown blotches and stains; the beautiful Lælio-cattleya Pallas (L. crispa ♀ × C. Dowiana ♂) and Masdevallia × glaphyrantha (M. infracta ♀ × M. Barlæana ♂).

W. Ward, Esq., Holmleigh, Putney Hill, S.W. (gr. Mr. W. Lager), exhibited two hybrid Cypripediums of the C. Harrisianum type, with very deeply coloured flowers.

At the meeting on April 24th there was again a fine display of Orchids, a considerable number being the usual familiar species. Among the rarer ones and those which received awards the following may be mentioned:—

W. M. Appleton, Esq., Weston-super-Mare, received a First-class Certificate for a particularly fine and strong Lælia cinnabarina. Two well-flowered examples of Cattleya Lawrenceana were also sent.

Walter Cobb, Esq., Tunbridge Wells, showed Maxillaria Sanderiana, Odontoglossum × Humeanum, and several others in good condition.

De Barri Crawshay, Esq., Sevenoaks, received an Award of Merit for Odontoglossum crispum "Florrie," a handsome variety. Two or three other good forms were also sent.

The Director, Royal Gardens, Kew, received a Botanical Certificate for Cirrhopetalum Collettii, and an Award of Merit for Phalænopsis tetraspis.

R. I. Measures, Esq., Camberwell, received a First-class Certificate for Cypripedium × Annie Measures, a beautiful spotted hybrid raised by Messrs. Sander from C. bellatulum ♀ and C. Dayanum ♂. C. × Merops (C. Druryi ♀ × C. ciliolare ♂) was also included in the group, for which a Bronze Banksian Medal was awarded.

Mr. J. O'Brien, Harrow-on-the-Hill, received a Botanical Certificate for the very curious Bulbophyllum saurocephalum.

Baron Schröder, The Dell, Staines, sent cut spikes of several very fine Odontoglossums, the beautiful Lælio-cattleya × Digbyano-Mossiæ, and L.-c. × bella.

A. H. Smee, Esq., Carshalton, received an Award of Merit for Dendrobium nobile, Smee's variety, a fine light form. D. linguiforme was also sent.

F. Wigan, Esq., East Sheen, sent a good Cattleya Mossiæ Reineckiana and two other forms.

Messrs. F. Sander and Co., St. Albans, received Awards of Merit for the Philippine Cœlogyne Swanianum, Rolfe, and Phaius Oweniæ, an unusually dark form, from Assam. The group was awarded a Silver Flora Medal.

Messrs. James Veitch and Sons, Chelsea, exhibited the beautiful Lælia × Latona; also Cypripedium × eurylochus, Chysis × Chelsoni, and others.

Walter C. Walker, Esq., Winchmore Hill; Mr. P. McArthur, Maida Vale; Messrs. W. L. Lewis and Co., Southgate; and Messrs. Hugh Low and Co., Clapton, each received a Bronze Banksian Medal for interesting groups. Messrs. Lewis's group included a small form of Odontoglossum × dicranophorum, Rchb. f., and Oncidium sessile, the latter receiving an Award of Merit. Odontoglossum crispum Lowianum from Messrs. Low's group also received an Award of Merit.

Messrs. B. S. Williams and Son, Upper Holloway, staged a very fine group, for which a Silver Banksian Medal was awarded. It contained the rare Rodriguesia venusta, Odontoglossum Edwardii, Oncidium sarcodes, and other fine things. Epidendrum radicans and Miltonia stellata each received an Award of Merit.

CORRESPONDENCE, &c.

R. I. Measures, Esq., Camberwell, sends a very fine flower of Cypripedium Mastersianum, the species figured at p. 17 of the present volume, but the dorsal sepal over 1¾ inches broad, and the petals proportionately broader. It is well coloured, and altogether the best flower we have seen of the species.

Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, Staffordshire, sends some beautiful flowers of Dendrobium Phalænopsis, showing how well it is grown there. It is well adapted for cut flowers, and lasted longer in water than some Odontoglossums enclosed with it.

H. J. R., Florence. The Sobralia may be undeveloped. It is much like S. macrantha, both in leaf and flower, and may be a form of it. Should like to see the Cypripedium again. It is very near one or two others.

J. M., Barnsley. A good typical Cattleya Mendelii.

H. H., Whitby. Photograph of Saccolabium Blumei received, with thanks. The three spikes are very fine.

O. O. W., Bury. The Cypripedium seedling sent is a good form of C. × Ashburtoniæ. C. × Laforcadei, also enclosed, was derived from the same two species, C. barbatum and C. insigne.

H. W., Whalley Range. Bletia Shepherdii, good.

E. A. B., Oxford. Odontoglossum × Andersonianum, good; Lælio-cattleya × Schilleriana; Lælia cinnabarina, a little darker than usual.

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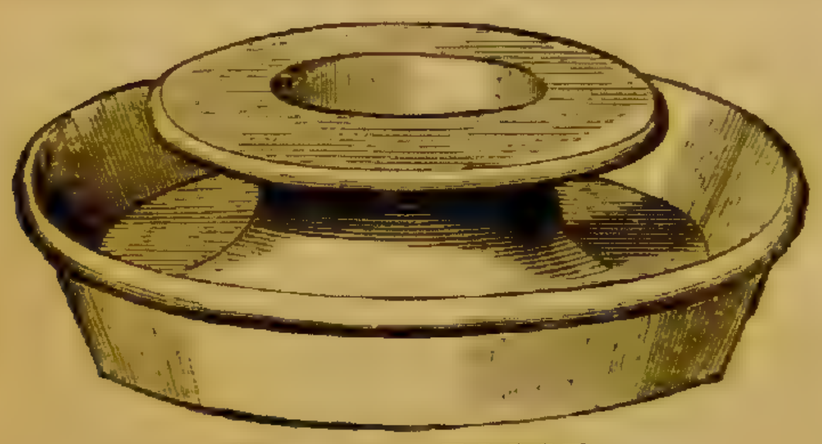

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	161
Obituary	162
Bifrenaria Harrisoniæ var. pubigera ...	162
Orchids in the Collection of Henry Graves, Esq., Orange, New Jersey	163
Dendrobium transparens album ...	165
Phalænopsis Parishii	165
Orchid Hybridisation	166
Odontoglossum × Andersonianum at Rosefield, Sevenoaks	168
Novelties	169
Pleurothallis inflata...	169
Dendrobium Sanderianum, &c. ...	169
Thunia Brymeriana...	169
Cœlogyne Mossiæ	169
Cattleya Brownii, &c.	170
Serrastylis modesta	170
Hybrids between Cypripedium and Selenipedium	171
The Hybridist	171
Dendrobium × Virginia	171
Cypripedium × Niobe varieties ...	172
Dendrobium × Cordelia	172
Dendrobium × Alcippe	173
Calendar of Operations for June ...	173
Dendrobium × crassinodi-Wardianum and its parents (Fig. 17–19) ...	177
Phalænopsis tetraspis	178
Orchid Portraits	178
Notice of Book...	179
The Manchester Show...	180
Orchids at the Antwerp International Exhibition...	183
Orchids at the Royal Horticultural Society	185
The Temple Show	187
Correspondence, etc.	192

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NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Victoria Street, Westminster, during June, on the 12th and 26th, respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

On the former occasion a prize of £1 is offered for the best Seedling Orchid, not exhibited previous to January 1, 1894. The competition is open to all.

We learn that Sir Trevor Lawrence was unable to give the Lecture on "Orchids," which was announced for the meeting on May 8th.

The May number of the *Kew Bulletin* contains descriptions of an eighth Decade of New Orchids by Mr. Rolfe, which are more particularly noted on another page.

The sale of the first portion of the celebrated Pickering Lodge collection took place on May 9th and 10th, and realised an aggregate sum of £2,600. The seedlings sold for £100. A plant of Cattleya Mossiæ Reineckiana was purchased by Messrs. Sander for 160 guineas, and C. Mendelii Firthii by Messrs. Hugh Low and Co., for 70 guineas. The best plant of Cattleya Skinneri alba realised 160 guineas, and part of the original C. Mendelii Quorn House variety 150 guineas, Mr. Fred Hardy being the purchaser. Lælia purpurata Hardyana went to Mr. W. Wells for 130 guineas. Of course these are exceptional prices, but the average price is said to have reached the high figure of between £4 and £5 per plant.

Owing to pressure on our space caused by Reports of the three great shows at Antwerp, Manchester, and the Inner Temple Gardens, several articles must stand over until next month. These Reports will be found on another page.

OBITUARY.

The death is announced, at Devoran, Cornwall, on April 30th, of the veteran plant collector, Thomas Lobb, at a very advanced age. In 1840 he was engaged by Mr. Veitch, sen., to collect plants, and during the next twenty years he visited the Eastern Himalayas and parts of Burma, afterwards the Malay Peninsula, Java and North Borneo, and subsequently the Philippine Islands. Many fine garden plants were introduced to cultivation by him for the first time, and among the Orchids may be mentioned, Cypripedium villosum, Calanthe rosea, Pleione lagenaria and maculata, Aërides Fieldingii, Vanda cœrulea, tricolor, and suavis, Cœlogyne speciosa, Dendrobium infundibulum and albosanguineum, &c. The very interesting natural hybrid Phalænopsis × intermedia was also sent by him from the Philippines. As the result of exposure in his work he had the misfortune to lose one of his legs, in consequence of which he gave up collecting, and settled down in Cornwall.

BIFRENARIA HARRISONIÆ VAR. PUBIGERA.

This is a remarkably distinct variety, which was originally described by Klotzsch, under the name of Maxillaria pubigera, in 1855. Since that time it seems to have been quite lost sight of, but now it has re-appeared among the importations of Messrs. F. Sander and Co., of St. Albans. The flowers are much smaller than in the type, the sepals being only eight lines broad and wholly light plum-purple, and the petals only five lines broad and much paler. The lip is also a little smaller, but has the usual shape, markings, pubescense and orange-yellow crest. The variety Buchaniana, which appeared in the late Mr. Buchan's collection at Southampton, in 1879, has the petals flushed with violet-purple, but the sepals white with some light green at the base. It is also normal in size. The variety pubigera is a strikingly distinct thing, and it would be interesting to know more about its origin, and whether it grows with the typical form. It would also be interesting to know if other plants are in existence in the country.

Bifrenaria Harrisoniæ, var. pubigera, Rchb. f. in *Gard. Chron.*, 1879, i. p. 430. Maxillaria pubigera, Klotzsch in *Otto and Dietr. Allg. Gartenz.*, xxiii. (1855), p. 106.

B. H. var. Buchaniana, Rchb. f. in *Gard. Chron.*, 1879, i. p. 430. Var. purpurascens, *Veitch Man. Orch.*, ix. p. 77.

ORCHIDS IN THE COLLECTION OF HENRY GRAVES, ESQ., ORANGE, NEW JERSEY.

THIS beautiful collection is located at Mr. Graves's winter residence, in Orange, New Jersey, fourteen miles from New York city. The Orchid houses are six in number, of various lengths, and contain one of the best collections in the country. The Cattleya house is sixty feet long by eighteen feet wide, and contains many hundred plants, including over one hundred distinct species, hybrids, named varieties, albinos, &c. There are some grand specimens of Lælia purpurata, with a total of 320 blossoms at present expanded, including such varieties as L. p. Nelisii, Williamsii, Schrœderæ, &c.; quantities of Lælia crispa showing well for flower; a fine plant of Cattleya Skinneri with nearly one hundred expanded blooms: together with smaller specimens of C. Warneri, Mossiæ, Trianæ, Schrœderæ, Mendelii, intermedia, &c., in flower. These will soon be enriched by many large specimens of C. Gaskelliana and Warscewiczii; C. Trianæ is now nearly over, but when in flower numbered over 450 blooms at one time. Lælio-cattleya × elegans is represented by many fine specimens, including such varieties as Turneri, prasiata, and Schrœderæ; while L.-c. × Schilleriana and its variety Wolstenholmiæ are also represented. The collection embraces also smaller plants of the leading species and hybrids usually found in other choice collections.

The entire collection is grown in red cedar baskets, in chopped Osmunda rhizomes, sphagnum, and charcoal. No pots are used. The plants are all healthy, and free from scale, thrip, &c., and are watered overhead twice a day, winter and summer, with the hose. A heavy coat of white lead and turpentine is the shading used in summer; this is entirely removed during winter, and the plants seem to enjoy the weak winter sun, and ripen up for bloom much better with its assistance.

Adjoining the Cattleya house is a smaller one used for Phalænopsis, and the bigibbum section of Dendrobium. These are all suspended in baskets, and grown in charcoal and chopped sphagnum. In this same house are grown also many fine plants of Oncidium Lanceanum, in baskets of charcoal. The benches below are occupied by hybrid Anthuriums, and the plants are all syringed overhead twice a day in fine weather, and are in good healthy condition. A temperature of 80° by day and 70° at night is afforded them in summer, with 10° less during winter.

The Cypripediums occupy a house sixty-five feet long by eighteen wide, and are great favourites with Mr. Graves. The collection is, without doubt, the best in the United States, numbering over seven hundred species, hybrids, and varieties. They are all grown in peat fibre, and chopped sphagnum, with liberal drainage. The temperature ranges in winter from 70° to 75° by day and 60° to 65° at night, and as near that mark as possible

in summer. Canvas shading, raised eighteen inches above the glass, is used through the heat of the day in summer, but during the winter no shade whatever is used.

The collection contains over one hundred unflowered crosses of the concolor section. Many are about to bloom, such as niveum ♀ × Elliottianum ♂, bellatulum ♀ × villosum ♂, bellatulum ♀ × insigne maximum ♂, Lawrenceanum Hyeanum ♀ × niveum ♂, and × Marshallianum ♀ × Lawrenceanum ♂, &c.; with many fine named varieties, such as C. × Tautzianum, × Marshallianum and varieties, × Antigone, × Arete, × Aylingii, × tessellatum porphyreum, × microchilum, × Arnoldianum, × Gravesiæ and var. superbum, × Georgianum, &c. This last has just flowered, and is a cross between C. superbiens ♀ × niveum ♂, the scape is double flowered, the flowers nearly four inches across, the dorsal sepal short, greenish white with brown markings at the base; the petals white suffused with vinous purple and specked with crimson; and the lip rich vinous purple. The name is given in compliment to Mr. George Graves.

A complete list of those at present in flower would consume too much space, but of the older varieties may be named Selenipedium Lindleyanum, Klotzchianum, and caricinum, and the hybrids S. × leucorrhodum, × Schrœderæ, × Sedeni and var. candidulum, × cardinale, × grande and var. atratum, × Dominianum, and × calurum Rougieri; Cypripedium × Harrisianum, × Bartetii, &c.; fine specimens from two to five feet across, and each a shower of bloom. Among the choice varieties in flower may be mentioned Cypripedium × Aylingii, × Gravesiæ, × almum atropurpureum, × rubescens pictum, × Beatrice, × Vibilia, × Greyanum, × Winnianum, × orphanum, × Schlesingerianum superbum, × Germinyanum, and × Godseffianum, also C. Chamberlainianum in variety, &c., &c.

Among the Vanda group there is little in bloom at present except Vanda suavis, tricolor, insignis and varieties, Aërides odoratum, Rohanianum, Fieldingii, Savageanum, and Vandarum; together with Angræcum Sanderianum and sesquipedale. The Vandeæ are all potted in charcoal, with a light top dressing of chopped live sphagnum; and are syringed overhead in fine weather. Air is admitted at all times in greater or less quantity according to the weather, and a temperature of 70° by day, and 60° at night maintained.

The adjoining compartment, sixty-five feet long by eleven feet wide, is devoted principally to Dendrobiums, of which about fifty species and varieties are cultivated, many of the commoner ones in quantities for cutting from. At present there are some fine specimens of D. thyrsiflorum, densiflorum, superbum, Findlayanum, Dalhousieanum, forty spikes, &c. The house is kept at about 50° during winter, and 70° to 75° (as near as possible) in summer. With few exceptions the plants are grown in sphagnum, with liberal drainage; syringing taking the place of watering.

The Odontoglossums are grown in winter in a lean-to north house, adjoining the Dendrobiums. The Masdevallias occupy a part of this house and are now a fine show of bloom. Noteworthy among them at present are two fine pieces of M. Harryana Gravesiæ, the white variety. The Odontoglossums number nearly one thousand plants, among them are some fine species and natural hybrids, many fine O. crispum and Pescatorei varieties are now in flower, with others, such as × Ruckerianum, × Andersonianum, cirrhosum, Sanderianum, × lanceans Gravesianum, × Josephinæ, &c., &c. The plants are grown in small pots, in a mixture of chopped peat and sphagnum, with good drainage. The temperature in winter ranges from 48° to 55°. Canvas, raised on frame work eighteen inches above the glass, is used for shading. During the hot summer months the plants are plunged in ashes in cold frames located in a shady situation. Canvas sashes are used through the day, but these are replaced by others covered with wire netting in the evenings. The plants are syringed overhead morning and evening, and in this manner usually stand the summer months in good condition.

DENDROBIUM TRANSPARENS ALBUM.

This is a very charming little Dendrobium, an albino of the well-known D. transparens. The flowers are spotless white, without a trace of colour anywhere. It was described in 1889 (Rolfe in *Gard. Chron.*, 1889, ii. p. 94), when it originally appeared in the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, under the charge of Mr. Hamilton, from whom we have now received a spray of its beautiful flowers. It is evidently very rare, for we find no record of any other plant, though the species has long been in cultivation, and was figured in the *Botanical Magazine* (t. 4663) as long ago as 1852. It is a native of the Tropical Himalayas, and appeared among some plants which had been imported by Messrs. F. Sander and Co., of St. Albans.

PHALÆNOPSIS PARISHII.

A plant of this lovely little gem is now flowering at Kew. Although but a few inches high, its raceme of small white and purple flowers gives it a most attractive appearance. Singularly enough, the large purple front lobe of the lip is articulated at the base and mobile, in which respect it differs from most others of the genus. It also bears four very long bristles at the base and a crescent of short ones in front of these. The side-lobes are minute and yellow. It is a native of Moulmein and was described in 1865,

from plants sent by the Rev. Mr. Parish to Messrs. Hugh Low and Co. A variety grows in Assam, which is said to have been sent by Thomas Lobb to Messrs. James Veitch and Sons, of Chelsea, some fifteen years earlier, and has the front lobe of the lip striped with brown and white. The conditions under which it grows in a wild state are recorded by Major-Gen. Berkeley at p. 242 of our last volume.

ORCHID HYBRIDISATION.

(*Concluded from page* 117.)

THE question which now remains is what to cross. Some details have already been given, at page 52, as to the selection of parents, but a record of some of the crosses which have been made without any result will also be useful as a guide. One frequently hears of remarkable and sometimes apparently impossible crosses which have been made, and, for a time at least, with every prospect of ultimate success, though in the majority of cases this early promise has not been fulfilled. Still seedlings are in existence which have been derived from very distinct parents, and will probably flower in due time. One of the most remarkable instances is that recorded at page 366 of our last volume by Mr. Burberry: "We have a healthy batch of about a dozen plants obtained by crossing Sobralia macrantha with the pollen of Cattleya gigas." In the case of such very different looking parents it should be possible to see at a very early stage whether the seedlings are true hybrids; for this is not always the case. Mr. Veitch records that "Zygopetalum Mackayi has been crossed with several species of Odontoglossum, and seedlings raised from some of the crosses, but every one that has yet flowered has proved to be Zygopetalum Mackayi"—a seemingly inexplicable fact. Our readers are invited to send notes of any other remarkable crosses, for it is desirable that any notes of this kind should be placed on record.

Among the crosses made by Messrs. Veitch from which capsules of apparently good seed were obtained, which still failed to germinate, are: Acanthephippium Curtisii crossed with Chysis bractescens, Bletia hyacinthina crossed with Calanthe masuca, Chysis aurea crossed with Zygopetalum × Sedeni, Odontoglossum bictoniense crossed with Zygopetalum maxillare, and Zygopetalum Mackayi crossed with Lycaste Skinneri. A very large number of others produced capsules, to all appearances externally perfect, not only from generic crosses, but between species of the same genus, which contained not a single seed.

Several attempts have been made to obtain hybrids between the tropical

and hardy species of Cypripedium, but hitherto without success, and it seems highly probable that the very diverse conditions under which they grow, coupled with their constitutional differences, form an insuperable barrier to their union. Numerous efforts have also been made to cross the tropical Cypripediums with the American Selenipediums, and not wholly without success, for a few seedlings have been raised, but the number of failures is sufficient to prove that they do not unite very readily. Attempts to intermix Masdevallia Chimæra and its allies with the brilliant-flowered species have generally ended in failure, though we believe such a seedling has now been raised. Calanthe vestita, it is said, refuses to cross with the species of the C. veratrifolia group, yet, singularly enough, it hybridises readily with Phaius grandifolius.

Sometimes a cross is effected and a capsule produced which is to all appearances perfect, but on dehiscing the placentæ show nothing but the remains of the shrivelled ovules, and in these cases it is doubtful whether fertilisation proper has ever taken place. In this family, as is now pretty well known, a considerable period elapses between the pollination of the flower and the fertilisation of the ovules—in the case of Cattleya Mossiæ as much as from seventy-five to about ninety days, as proved by experiments made in Messrs. Veitch's establishment. When the flowers expand the ovary and ovules are in a very rudimentary state, but the act of pollination, or the application of the pollen to the stigma, applies a stimulus to the ovary and causes it to swell. The effect is visible after the lapse of a few hours, as the floral segments become flaccid and show signs of withering. In a couple of days the pollinia are seen to be disintegrating, forming, with the viscid secretion from the stigma, a gelatinous mass that quite fills up the stigmatic cavity. At the same time the pollen tubes have commenced to grow. In eight days the tubes have reached the base of the column, being found in vast numbers among the cells of the conducting tissue. At the end of a month the ovary has become considerably enlarged, and the placentæ and ovules are beginning to assume a definite form, while the pollen tubes are pushing downwards along the sides of the placentæ and among the ovules. In two months, though the pollen tubes are present in countless numbers, and have even reached the base of the ovary, the ovules are not yet developed, but soon afterwards they rapidly undergo a change of form, and at the end of about three months the long-looked-for event takes place. The pollen tubes now come into contact with the apex of the ovule, and fertilisation is effected; after which alone the embryo is developed.

It is noteworthy that before this event takes place the ovary has developed from a terete body, less than a quarter of an inch in diameter, to a six-angled one, more than seven times as broad, and as a mere result of the stimulus given by the act of pollination and the subsequent growth

of the pollen tubes. It is therefore easy to see how an apparently good capsule may develop without containing a single seed, or even without the ovules having ever been fertilised. Even when good seed is present the capsules invariably contain a large number of shrivelled ovules, and there is good reason to believe that the majority of these abortive ovules have never been impregnated by the pollen tubes. It is now evident that the pollen of many Orchids serves to stimulate the development of the ovary without effecting the fertilisation of the ovules, hence the large number of apparently good capsules which contain no seeds is easily explained.

A large number of these abortive crosses have been made but never recorded, though a record would be valuable as a guide to others. Much of the work at the present time is proceeding along well-defined lines, with definite objects in view, and under these conditions rapid progress is being made. But we are glad to know that a few rash experiments are also being made, as in this way some quite unlooked-for results may be attained. The subject is an extremely interesting one, and we hope our readers will favour us with their experiences, as much yet remains to be recorded.

ODONTOGLOSSUM × ANDERSONIANUM AT ROSEFIELD, SEVENOAKS.

A series of forms of this hybrid from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, well illustrates its extreme variability, which was considered in detail at p. 171 of our last volume. In fact, scarcely any two seem exactly alike, and any attempt to arrange them under varietal names seems well-nigh impracticable. The extremes of variation in any direction may easily be so distinguished, but for the host of intermediate forms we do not think such a course either desirable or necessary.

The finest form sent is one called De Barri Crawshay's variety, which received an Award of Merit on April 10th last. It is characterised by having a very large blotch about the middle of each sepal and one or two smaller ones near the base, and by the long attenuate lip which suddenly narrows just above the broad base. The flower measures over three and a quarter inches across the petals, and both the sepals and petals are broad. The raceme bore twelve flowers.

A second form has smaller blotches, a little yellow in the ground, and the ordinary shaped lip. A third has a little rosy suffusion and very numerous small spots, and this is nearest to O. × Ruckerianum. It bears sixteen flowers. The next has a light yellow ground with many small spots, and thus is a form of O. × hebraicum. It is convenient to retain these original names for so extremely variable a plant, though it must be clearly

understood that they pass into each other by a series of intermediate forms, as has already been pointed out.

A flower of O. crispum var. "Florie," which received an Award of Merit on April 24th, is also enclosed. It measures over four inches across the petals, which latter are one and a quarter inches broad. The sepals are suffused with purple and the deeply-notched petals partially so, both being blotched with reddish purple on the disc. It is a large and beautiful variety.

NOVELTIES.

PLEUROTHALLIS INFLATA, Rolfe.—A Columbian species introduced by Messrs. F. Sander and Co., of St. Albans, with whom it flowered in September, 1891, and subsequently at Glasnevin, and elsewhere. It is allied to P. Lindeni, Lindl. and P. ruberrima, Lindl., and bears semi-translucent whitish flowers with some purple spots and streaks on the sepals and petals. The united lateral sepals are ventricose or inflated, in allusion to which the name is given.—*Kew Bulletin*, 1894, p. 154.

DENDROBIUM SANDERIANUM, Rolfe.—A very beautiful Bornean species belonging to the section Formosæ, though differing from every other in having the base of the mentum inflated into a short sac, as in D. Phalænopsis. The flowers are white, and most resemble those of D. Dearei, but are larger, and the lip broader, more entire, and stained with light purple at the base instead of light green. The stems continue to elongate for some time, and throw out fascicles of two or three flowers from the axils of the short leaves. It was introduced by Messrs. F. Sander and Co., of St. Albans, with whom it flowered last autumn.—*Kew Bulletin*, 1894, p. 155.

DENDROBIUM GLOMERATUM, Rolfe.—A Moluccan species introduced by Messrs. James Veitch and Sons, of Chelsea, and flowered in their establishment last December. It belongs to the section Pedilonum, and bears short congested racemes of bright rose-coloured flowers with an orange-vermilion lip.

THUNIA BRYMERIANA, Rolfe.—A handsome Burmese species which flowered with Messrs. F. Sander and Co., St. Albans, in June, 1892, and at Kew in the following year. It is allied to T. Marshalliana, Rchb. f., but differs in having the throat of the lip striped with numerous crimson-purple radiating veins.

CŒLOGYNE MOSSIÆ, Rolfe.—A native of the Nilghiri Hills, South India, which flowered in the collection of John S. Moss, Esq., Wintershill,

Bishops Waltham, Hants, in June, 1890, and subsequently. The flowers are of good size, white, with a light yellow crescent-shaped marking in front of the keels. It is allied to C. nervosa, A. Rich.—*Kew Bulletin*, 1894, p. 156.

CATTLEYA BROWNII, Rolfe.—Introduced from the province of Minas Geraes, Brazil, by Messrs. F. Sander and Co., St. Albans, with whom it flowered last November. It is a tall plant, allied to C. Harrisoniæ, Batem. The flowers are borne in short racemes of two to five each, the sepals and petals rosy purple, also the front lobe of the lip, while the side lobes are whitish, slightly suffused with light rosy mauve, and the disc yellowish white.—*Kew Bulletin*, 1894, p. 156.

EPIDENDRUM HARTII, Rolfe.—Sent from Trinidad by J. H. Hart, Esq., F.L.S., superintendent of the Botanic Garden there. It also flowered at Glasnevin, with Mr. F. W. Moore, in May, 1890. It bears lax panicles of light whitish yellow flowers, and is allied to the New Granadan E. purum, Lindl.—*Kew Bulletin*, 1894, p. 157.

ORNITHIDUM FRAGRANS, Rolfe.—A species with light mauve-purple, heliotrope-scented flowers, which flowered with Mr. F. W. Moore, A.L.S., at Glasnevin in March, 1893, and in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, in January following. It was imported by Messrs. F. Sander and Co., of St. Albans, and is allied to the Mexican O. densum, Rchb. f.—*Kew Bulletin*, 1894, p. 157.

ONCIDIUM BREVILABRUM, Rolfe.—A species introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in November last. It belongs to the group Rostratæ, but differs from every other in having the front lobe of the lip nearly obsolete, while the side lobes are well developed. The flowers are bright yellow with a few narrow brown bars on the lower part of the segments. A few of the flowers are abortive.—*Kew Bulletin*, 1894, p. 158.

SERRASTYLIS MODESTA.—This is a very interesting new genus, which flowered in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, in February last. It was obtained from Mr. J. O'Brien, of Harrow-on-the-Hill, who received it from Mr. F. C. Lehmann, from the Andes of New Granada. It is somewhat anomalous in structure, as it bears some resemblance to Trichopilia, Ornithocephalus, and Brassia, though perhaps most allied to the latter. It bears drooping racemes, with reddish brown sepals and petals margined with pale yellow, and a whitish yellow lip.—*Kew Bulletin*, 1894, p. 158.

HYBRIDS BETWEEN CYPRIPEDIUM AND SELENIPEDIUM.

In your description of the Cambridge Lodge collection of Orchids on p. 106, you state that Cypripedium Rothschildianum has been crossed with Selenipedium × leucorrhodum, and that it is only one of a series of crosses made between the two genera, Cypripedium and Selenipedium, though hitherto without any practical result; for while numerous capsules have been obtained, no seed has ever yet been induced to germinate. It would appear that Mr. Measures has not yet any young plants up of this cross, and when he has I venture to think he will find them much more difficult to rear than when the Old World Cypripediums are fertilised between themselves, and likewise the New World Selenipediums. These mostly come freely, and are moderately easy to manage; but the intercrossing of the two genera is a much more tiresome matter. I have crossed Cypripedium Parishii with Selenipedium caricinum, ripened the seed, sowed it, and raised young plants, and grown them for several years, and at the end of that time they were only in thumb pots. These plants, if now living, must be some twelve or fourteen years old, but I have no knowledge if they have ever flowered, though they were perfectly healthy when the collection I had charge of at Oakley, Fallowfield, Manchester, was sold by private treaty. These seedlings, with some others, went to Messrs. W. Thomson and Son's Nursery, Clovenfords, Galashiels; and I doubt not if inquiry were made respecting them some further information might be obtained.

Bystock, Exmouth. W. SWAN.

[We hope to learn more particulars of this interesting cross. Allusion was made at p. 66 to some seedlings raised between Cypripedium Lawrenceanum ♀ and Selenipedium × Sedeni ♂, which Mr. Swinburne, of Cheltenham, hopes to flower soon. Also to some raised many years ago between S. caudatum × C. barbatum by Messrs. Veitch, which they have just written to say have not flowered, and do not yet show any signs of doing so. Mr. Statter, of Whitefield, Manchester, has also a reputed cross between S. × Sedeni ♀ and C. Stonei ♂ just showing for flower, of which we hope to hear more. At present it looks much like a plant of C. Stonei, and the opening of the flowers will be awaited with interest.—ED.

THE HYBRIDIST.

DENDROBIUM × VIRGINIA.

A beautiful hybrid, raised in Messrs. James Veitch and Sons' nursery at Langley, near Slough, by Mr. Seden, from Dendrobium moniliforme (japonicum) ♀ and D. Bensoniæ ♂, and thence the first in which D. Bensoniæ has participated in the parentage. The chief features of the flowers are

their pleasing shape and pure white colour, relieved only by a small maroon spot near the base of the lip; they are about two inches in diameter; the characters of the two parents being intimately blended. On account of the shortness of the internodes, the stems are quite hidden by the flowers along that part from which they are produced, a circumstance that greatly enhances the effect. It received the award of a First-class Certificate from the Royal Horticultural Society on March 13th last.

Cypripedium × Niobe varieties.

Among seedlings of this fine hybrid raised in the collection of H. Graves, Esq., Orange, New Jersey, U.S.A., are three which have received distinctive varietal names. C. × Niobe oliganthum is rather darker than the type, and the petals are but little spreading. It is robust and very handsome. C. × N. purpureum is less robust, and has a smaller, darker flower. The dorsal sepal is heavily reticulated with vinous purple, and the petals, lip and staminode suffused with the same. Thus it has more of the character of C. Fairieanum, the pollen parent. C. Spicerianum was the seed parent. C. × Niobe luteum was raised from C. Spicerianum var. aureum ♀ and C. Fairieanum ♂, and differs from typical C. × Niobe in having more yellow petals suffused with rich brown on the undulate margin, and the lip pale yellow suffused with sepia. All are very handsome varieties.

R. M. Grey.

Dendrobium × Cordelia.

Mr. Seden has certainly added one more to his numerous successes in raising the above beautiful hybrid. Its parents are D. aureum ♀ and D. × euosmum leucopterum ♂, and its descent may be thus graphically expressed :—

D. moniliforme (japonicum) ♀ + D aureum ♂ → D. × endocharis ♀ + D. nobile ♂ → D. aureum ♀ + D. × euosmum v. leucopterum ♂ → D. × Cordelia.

The flower is three inches in diameter, and, as might be expected, most resembles D. aureum in shape. The sepals and petals are ivory white, each of the former being narrowly margined with light pink. The lip, as in the case of D. aureum, is slightly three-lobed, the margin of the side lobes being light yellow, and that of the front lobe together with the apex white. The greater part of the lip is taken up with a large rich crimson feathered blotch. It is a flower of great beauty and will doubtless prove as free growing and floriferous as its allies. The flower has been kindly sent by Messrs. Veitch.

DENDROBIUM × ALCIPPE.

Raised in Messrs. James Veitch and Sons' nursery from D. lituiflorum var. Freemanii ♀ and D. Wardianum ♂, and thence approaching D × micans, of which it may be considered a distinct variety. The flowers are intermediate in shape and size between those of the parents, but the colour of the seed parent preponderates. The sepals and petals are bright rose-purple, a little paler towards the base; the lip, the most striking ornament of the flower, is chiefly white, with a transversely oblong Indian-purple disk, and a narrow apical border of rose-purple. It received an Award of Merit from the Royal Horticultural Society on April 10th last.

CALENDAR OF OPERATIONS FOR JUNE.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

SIMPLE attention may safely be said to be the only means whereby successful cultivation is attained. There are no other secrets. The temperature and other conditions under which the various species of Orchids are seen to best luxuriate should be noted, and secured as thoroughly and as punctually as circumstances will permit. The day temperature for the cool-house must now be kept as low as possible, at the same time keeping a very moist atmosphere, as advised last month. It is best now not to let the night temperature go much below 55°, although a few degrees below this need not be feared. For the intermediate houses, day with sun 75° to 80°; day without sun 70° to 75°; night 65° to 70°; morning 60° to 65°. Ventilate freely, shade as required, and damp down frequently, as advised last month. For the East Indian or Dendrobium houses, temperature: day with sun 80° to 95°; day without sun 75° to 80°; night 70° to 75°; morning 65° to 70°. Keep up an abundance of moisture, and when giving top ventilation open those ventilators on the leeward side principally. Roll up the blinds early in the afternoon while the sun has still some power, at the same time reduce the volume of air, and again thoroughly saturate the side walls, floors, and stages between the pots, and thus cause a warm, moist-growing temperature which will last well into the evening, when it is best to have a little warmth in the pipes, in order to prevent the temperature from falling too low during the night.

Let it always be borne in mind that much depends upon the position in the house that a plant may occupy, and should a plant not grow kindly, do not hesitate to change its position, say from one end of the house to the other, or from a shady place to a sunny one, or *vice versâ*, to the most airy or to the dampest place. In many cases it is evident that the plants experience a decided advantage in one position which is denied to them in the other, and it is therefore most important that these right places should

be known and made use of, for it is then that Orchids grow so freely and give so little trouble. Instances of the above are frequently occurring to me in my practice: here are a few of them. It is of course well known that Aërides Fieldingii and A. crispum are intermediate growing kinds, yet nowhere could I find a position for them where they seemed to be quite at home until I gave them a corner in the Mexican house, where the sun never strikes owing to the fact that this particular corner is shaded by a high building. In such a place they seem quite contented, having air, and sun warmth, though themselves nicely shaded. Colax jugosus also grows well here. Burlingtonias are beautiful Orchids, but not among the easiest to keep in a flourishing condition. I am trying them in the last-mentioned place, and can see a decided improvement.

When the roller blinds are in use, there are frequently some spaces through which the rays of the sun can penetrate unbroken, sometimes it is through a division between two blinds, caused by their not meeting close together; or it may be at each end of the house through the same cause; and such places are very good for plants wanting more sunshine. If such a place should occur in the hottest departments, I would recommend that Oncidium splendidum be there suspended, as this Orchid, with its thick leathery leaves, delights in full sun. Vanda teres and V. Hookeriana could also be grown there with advantage, and many others could be selected which have been mentioned in former Calendars.

The Mexican Lælias and other Orchids under the same treatment will now dry very quickly, owing to the action of air and sun, and should receive water in abundance. Many may not actually be making new growth, though they should not on that account be kept dry, but treated liberally, and when the new breaks appear they will quickly form new pseudobulbs. In fact, instances of over-watering in any of the departments need not now be feared, if done in moderation, and the compost is sweet and porous. As soon as the sphagnum moss assumes a whitish appearance a good soaking should be afforded, and then left until the moss again shows signs of dryness. If in doubt whether a plant is sufficiently dry to water, let it remain until the following day; that is to say, never give a little water because the plant is not dry enough to thoroughly water.

Masdevallias, the repotting of which may and should now be done without delay (excepting those in flower, and they should be attended to when they have done blooming). Pot in a mixture of peat and moss in equal parts, half fill the pots with drainage, and press the compost moderately firm only. Some growers use a small quantity of fibrous loam for the stronger growing kinds such as M. Harryana, but it is not really necessary. The small-growing kinds are best suspended in pans or baskets, or if in pots they must be well up to the light. Masdevallias, according to my experience, should be kept as cool and as moist as possible during summer,

but during winter the temperature which suits the ordinary cool-house Orchids is about 5 degrees too cold for them. M. ephippium (Trochilus), M. tovarensis, and the Chimæra section of Masdevallias, are best grown in intermediate temperature the whole year round. All of them delight in a liberal supply of water during the growing season, and if new material is given to the roots at least once in two years successful cultivation is assured. Along with the Masdevallias the pretty little Sophronitis grandiflora grows very freely, if placed in small pans, and this is the right time to give new material to its roots.

No good purpose can be served by keeping Cattleya gigas dry in order to make it bloom more freely after this date. If the young growths have not already the flowering sheaths formed within, no drying in the world will produce them now, and the plants may therefore be freely watered in order to assist the building up of strong pseudobulbs. It frequently happens that this species, like others of the same genus, produces flowers without a sheath, whilst, on the other hand, a sheath may be formed and fail to bloom, but these are exceptions and not the rule.

Cattleya Rex should this year show its true character, and we shall then be able to form an opinion of its real qualities. I have not yet seen a variety so exquisite as the original painting. Enough, however, have flowered to prove that it is a very variable species, and perhaps, out of the many that will bloom this year, something startling may turn up; more especially as the new pseudobulbs will in some instances be equal in size to the imported ones. It grows best near the glass in the warmest department. It may be repotted when the new growths are starting, or it may also be done when the flowering period is over. The beautiful Cattleya Dowiana aurea should by this time have had all necessary work done in the way of repotting. This species amply repays a little extra attention to grow it well. It should have a place at the warmest end of the Cattleya house, both when growing and when at rest, even the coolest and most airy part of the warmest house is not too warm for it. Cattleya Lawrenceana should be repotted now, and requires the same treatment as the last named.

An amateur asks "when to repot Lælia purpurata." This lovely species is now making a great show, though, unfortunately, the flowers are of comparatively short duration. It may be repotted any time during this month, and is best grown in pots half filled with drainage, in a compost of peat and sphagnum moss in equal parts. Intermediate temperature is most suitable for it. After flowering is the proper time to repot most Orchids, but there are a few exceptions, and these are the late-summer or autumn-flowering kinds, such as Cattleya Bowringiana, C. labiata, Lælia pumila (Cattleya marginata), Odontoglossum grande, and some others; also some of the Oncidiums. Such kinds should be left until spring and then repotted. It is exceedingly bad practice to disturb Orchids late in the summer and autumn.

Odontoglossum crispum (Alexandræ) is the latest to be molested, and even this should not be done after September.

I am also asked "the best way to establish newly imported Odontoglossum Alexandræ." When these are purchased they are often in a desperately shrivelled condition, and a little careful treatment is necessary or many may not recover. There must be no delay; neither must there be undue haste. All the dead and useless matter should be trimmed off, and the plants placed on a layer of sphagnum moss on the stage in the cool-house, in an upright position. The moss must be kept moist, but it is best not to wet the plants themselves until reaction has set in, when they will become plump and push out new roots. When this happens the plants may be potted and treated in the usual manner. The plan of placing newly imported Orchids under the stages, or hanging them up head downwards and syringing them, cannot be too strongly condemned. The system above recommended can be relied upon as being the best way to establish all species of Orchids. When it happens that the foliage of any survives the journey, and especially of those where it is thick and persistent, such as Cattleyas and Lælias, every effort should be made to preserve it, as the foliage is a great source of strength. And to assist in this matter it is well, in addition to setting the plants on damp moss without delay, to protect from strong light for the first few days by placing on extra shading.

Dendrobium Bensoniæ, now in flower, is second to none in beauty, but as regards culture it is, perhaps, one of the most disappointing. It should be grown in very small pans or baskets, and suspended in the hottest possible part of the house, and watered very sparingly. This Orchid generally receives its death-blow during the winter, to avoid which it must then also be grown hot and dry. Dendrobium aggregatum is another Orchid requiring the same treatment; also Diacrium (Epidendrum) bicornutum, which is now in bloom. Epidendrum Parkinsonianum is another which delights in such a position as advised for Oncidium splendidum, and the same may be said of the genus Brassavola.

This is a good season to repot Ada aurantiaca. It may be grown with the cool Orchids during summer, but, like the Masdevallias, requires a warmer winter temperature, for if kept too cool the leaves turn a sickly tint and becomes badly spotted, and this should be avoided if possible, as they frequently then die off very rapidly.

Red spider will probably give some trouble now, principally amongst the Dendrobiums. Where traces of it are found—and it may be detected by the leaves showing a whitish appearance on the under surface—the leaves should occasionally be sponged, either with clear water or some diluted insecticide; but by all means avoid syringing the foliage with insecticide, as the force produced causes it to penetrate the leaves, thus producing great injury.

DENDROBIUM CRASSINODI-WARDIANUM AND ITS PARENTS.

THE annexed figure represents the handsome natural hybrid Dendrobium × crassinodi-Wardianum, and its parents, taken from plants which flowered in the collection of Mr. James Crispin, F.R.H.S., at Fishponds, near Bristol, last spring. The history of this interesting hybrid was given at p. 175 of our last volume, and it is unnecessary to repeat here, beyond stating that it has appeared on several occasions among importations of D. Wardianum, from Burma, and that D. crassinode is known to grow in the same locality.

Fig. 17. DENDROBIUM CRASSINODE. Fig. 18. D. WARDIANUM.
Fig. 19. D. × CRASSINODI-WARDIANUM.

Dendrobium crassinode (Fig. 17) is well known by its short pendulous stems with much swollen nodes, and medium-sized white flowers with purple-tipped segments, and a large yellow disc without any brown spots.

D. Wardianum (Fig. 18) has much longer stems, only slightly swollen at the nodes, and large flowers, somewhat similar in colour, but with the addition of a pair of brown eye-like blotches near the base of the lip.

D. × crassinodi-Wardianum (Fig. 19) combines well the characters of

the two parent species. In habit it most resembles D. Wardianum, but the nodes of the pseudobulbs are more swollen and closer together. The flowers are nearly intermediate in character, as is well shown in the figure, the segments being a little shorter than in D. Wardianum, and the lip having a pair of smaller brown blotches near the base. It originally appeared as long ago as 1879, four years after the Burmese form of D. Wardianum was introduced to cultivation by Messrs. Hugh Low and Co. The flower here photographed is from a plant which, as in preceding cases, appeared quite accidentally among D. Wardianum, but revealed its true character on flowering. The photograph was kindly sent by Mr. Crispin.

PHALÆNOPSIS TETRASPIS.

This beautiful white Phalænopsis, so much like P. speciosa in shape, seems to succeed well at Kew, where several plants are now flowering, one of them bearing three spikes. One spike has five flowers. If the plants ever become strong enough to produce the strong branched spikes seen in wild specimens it will certainly be a very effective thing. It is perhaps a question of time, as both leaves and spikes may grow much larger when the plants become older. Such a plant as that recorded at p. 209 of our last volume would create a sensation if it could be grown in England, and would be worth a pilgrimage to see.

ORCHID PORTRAITS.

Brassia Lawrenceana.—*Gard. Mag.*, May 5th, pp. 247, 248, with fig.

Cattleya Rex.—*Revue Hort.*, May 16th, p. 228, with plate.

Cattleya Trianæ Schrœderæ.—*Gard. World*, April 28th, pp. 564, 565, with fig.

Cœlogyne Mossiæ, Rolfe.—*Journ. of Hort.*, May 10th, pp. 364, 365, fig. 59.

Cypripedium × Adrastus.—*Gard. Mag.*, April 28th, p. 232, with fig.

Cypripedium × Annie Measures. A fine hybrid derived from C. bellatulum ♀ and C. Dayanum ♂, which was raised by Messrs. F. Sander and Co., St. Albans, and flowered in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell.—*Journ. Hort.*, May 3rd, p. 337, fig. 55; *Gard. Mag.*, May 19th, p. 278, with fig.; *Gard. Chron.*, May 26th, p. 657, fig. 81.

Cypripedium × Calypso, Oakwood var.—*Reichenbachia*, part 8, p. 69, t. 77.

Cypripedium × Klotzschianum, Rchb. f.—*Gard. Chron.*, May 19th, p. 625, fig. 78.

CYPRIPEDIUM × MACROCHILUM GIGANTEUM.—*Gard. Mag.*, May 12th, p. 265, with fig.; *Journ. of Hort.* May 17th, pp. 386, 387, fig. 62.

CYPRIPEDIUM × MASTERSIANUM, Rchb. f.—*Gard. Chron.*, May 12th, p. 593, fig. 74.

DENDROBIUM CHRYSANTHUM. A fine specimen, grown by Mr. Frank Lowe, gardener to the Marquis of Downshire, Easthampstead Park, Wokingham.—*Gard. Chron.*, May 5th, pp. 564, 565, fig. 71.

DENDROBIUM × DELLENSE.—*Journ. of Hort.*, May 17th, pp. 379, 386, fig. 61.

DENDROBIUM × EURYALUS.—*Journ. of Hort.*, April 26th, pp. 315, 322, fig. 52.

DENDROBIUM GLOMERATUM, Rolfe.—*Gard. Chron.*, May 24th, p. 653, fig. 80.

EPIDENDRUM ELLISII, Rolfe.—*Journ. of Hort.*, April 26th, pp. 322, 323, fig. 53.

EULOPHIELLA ELISABETHÆ.—*Neubert's Gart. Mag.*, January, p. 2, t. 1.

LISSOCHILUS GIGANTEUS, Welw.—*Reichenbachia*, part 8, p. 77, t. 80.

MASDEVALLIA CHIMÆRA VAR. MOOREANA. A variety with deep yellow ground.—*Reichenbachia*, part 8, p. 71, t. 78.

MILTONIA PHALÆNOPSIS.—*Reichenbachia*, part 8, p. 75, t. 79.

PHALÆNOPSIS STUARTIANA.—*The Garden*, May 19th, p. 426, with fig.

WARSCEWICZELLA WAILESIANA.—*The Garden*, May 12th, p. 336, t. 961.

NOTICE OF BOOK.

A Manual of Orchidaceous Plants Cultivated under Glass in Great Britain. Part X. General Review of the Orchideæ. James Veitch and Sons, Royal Exotic Nursery, Chelsea.

Preceding parts of this highly meritorious work have been noticed in our columns, hence it is unnecessary to say anything as to its scope and detail. Suffice it to say that the part now issued, which completes the work, fully maintains the same high standard. It is devoted to a general review of the Order, and treats of the Morphology of Orchid flowers; Homologies of Orchid flowers; Teratology of Orchids, by Dr. Maxwell T. Masters; Vegetative structure; Minute structure; Fertilisation; Hybridisation; Geographical distribution and climatology, illustrated with two maps showing temperature and rainfall; Classification; A Retrospect of Orchid Culture; Orchid Amateurs of the past; Some results of the Hybridisation of Orchids; Literature and Glossary of technical terms, most of the articles being profusely illustrated. It concludes with a scheme for binding the work in two volumes, and an Index of Genera for each, though the separate pagination of each part renders it somewhat difficult to use. Those who

have had their parts bound separately will probably not regret it. Part X. is full of highly interesting and readable matter, which will be useful for future reference, and it must surely have been an oversight that there is neither an Index to this particular part, nor yet a list of the headings of "chapters," as we may term them. The omission renders this part more difficult to consult than preceding ones. However, this and other matters will probably be remedied in a future edition. Messrs. Veitch are to be congratulated on the completion of this important work, which we recommend to our readers with the greatest confidence.

THE MANCHESTER SHOW.

THE Annual Whitsuntide Show of the Royal Botanical and Horticultural Society of Manchester, which was held at The Gardens, Old Trafford, on May 11th, and five following days, was a highly successful one. The Orchids occupied the greater part of the large Exhibition-house, and made a most brilliant display; and as this building is heated up to greenhouse temperature there is no risk to the health of the plants if the weather is cold, as sometimes occurs at this season.

The first prize for the best Miscellaneous Collection of Orchids was secured by W. J. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), for an excellent and tastefully arranged group, in which were many fine Odontoglossums, as O. × Ruckerianum, a large, richly coloured, and well-flowered plant, the rare O. Schillerianum, O. hystrix, a wonderfully fine O. × Coradinei, the charming O. nævium, O. triumphans, O. × Wilckeanum, some good forms of O. crispum, a fine O. × elegans and its two parents Hallii and cirrhosum, and others. The group also contained some good Cattleya Mendelii and Mossiæ, C. Skinneri alba, C. intermedia alba, and C. Aclandiæ; a fine specimen of Dendrobium Bensoniæ, many good D. Phalænopsis, D. Parishii, some forms of Masdevallia Harryana, and other Orchids. F. Hardy, Esq., Ashton-on-Mersey (gr. Mr. Safford), came second with a large group, artistically arranged in clumps and on pedestals, with small vistas between, at the end of the building. It included many good forms of Odontoglossum crispum, a very fine O. nebulosum with a seven-flowered raceme, O. hystrix, O. citrosmum, O. Hallii, O. × Andersonianum, a good Dendrobium Dearei, D. Devonianum, D. nobile, several good Chysis bractescens, Cattleya citrina, Miltonia Roezlii, Cymbidium Lowianum, and others. E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Stafford), secured the third prize with a group which contained many good things, including Lælia grandis, some excellent Cattleya Schrœderæ, some splendidly grown and flowered plants of Dendrobium Dearii, Oncidium sphacelatum and ampliatum, the graceful Brassia verrucosa, Cœlogyne Dayana, Cypripediums hirsutissimum, bellatulum, and niveum, the latter

particularly good, Vanda suavis, Cattleya Mendelii and Mossiæ, Lælia purpurata, and others.

In a similar Class for Nurserymen, Mr. James Cypher, Cheltenham, took the first prize with a well-grown lot, which included a fine Oncidium cucullatum, also O. Marshallianum and concolor, both very effective, Masdevallia Veitchiana and Harryana, a fine Odontoglossum polyxanthum, some good O. × Wilckeanum ; also fine forms of the usual common things, as Lælia purpurata, Cattleyas, &c. Messrs. Heath and Son, of Cheltenham, were a good second. The group included Cattleya Mendelii Hardyana, a superb form, C. Skinneri, crowded with its beautiful rosy flowers, Odontoglossum citrosmum, Cypripedium Chamberlainianum, and C. × Swinburnei, also many other good things.

For the best collection of Cattleyas and Lælias a Silver Cup was offered by Joseph Broome, Esq., Chairman of the Council, which was won by Mr. James Cypher, with an excellent group, including Lælia grandis, L. purpurata Russelliana, and others, Cattleya Warneri, intermedia, Skinneri, &c. T. Statter, Esq., Stand Hall, Whitefield (gr. Mr. Johnson), was second with a good lot, among which the dark-lipped Lælia purpurata Lindeniana and Lælio-cattleya × Schilleriana Statteriana stood out conspicuously.

The Silver Cup presented by William Stones, Esq., for the best collection of Cypripediums, was secured by W. R. Lee, Esq., Audenshaw (gr. Mr. Billington), with twenty-seven good plants, including a fine C. Rothschildianum, ciliolare, Exul, Argus, Curtisii, the hybrids C. × Goweri (Curtisii × Lawrenceanum), × macropterum, × Southgatense, × selligerum, and others, also Selenipedium caudatum Wallisii. T. Statter, Esq., came second with C. Exul, × Daviesianum, × Pitcherianum, × vernixium, the beautiful C. spectabile, also Selenipedium × Dominianum and S. caudatum atratum, with dark stain round the mouth of the lip. Mr. J. Cypher was third with a large group, including C. concolor, Selenipedium × Schrœderæ and many familiar forms.

For Dendrobiums, a Silver Cup was presented by the late George Hardy, Esq., which fell to Mr. J. Cypher, whose group included a fine D. Dalhousieanum, thyrsiflorum, Parishii, the rare D. sulcatum, crystallinum, Bensoniæ, moschatum, tortile, aggregatum, Phalænopsis, &c. Mrs. Hodgkinson, High Lawn, Bowdon, took the second prize, her group including D. × Venus, a finely-flowered D. lituiflorum, D. Devonianum, D. Falconeri, D. nobile, and others.

A Silver Cup was offered by T. Statter, Esq., for fifteen Miscellaneous Orchids, which was won by E. Ashworth, Esq., with a splendid Dendrobium Dearei bearing fourteen spikes, a fine pan of Cypripedium niveum, some good Cattleyas and Lælias, and other things. W. R. Lee, Esq., took the second prize, his group including the rare and beautiful Dendrobium atroviolaceum, Lælio-cattleya × Phœbe, Maxillaria Sanderiana, &c.

A Silver Cup was offered by J. Galloway, Esq., J.P., for ten *bona fide* specimens, which was secured by Messrs. Heath and Son. Cattleya Skinneri, nearly a yard across and covered with flowers, was especially fine, also C. Lawrenceanum. Other noticeable plants were C. Mendelii, Lælia purpurata, Cymbidium Lowianum, and Miltonia Roezlii. Mrs. Hodgkinson was second with a good group of well-known things.

The Silver Cup given by John Wainright, Esq., J.P., for twenty specimen Orchids, fell to H. Shaw, Esq., Ashton-under-Lyne (gr. Mr. Smith), for an excellent group.

Messrs. John Linden and Son, Brussels, offered a Silver Cup for twenty-four Odontoglossum crispum, which was won by F. Hardy, Esq. W. J. Thompson, Esq., took the second prize, the third going to W. R. Lee, Esq. Each group contained some good forms.

T. Statter, Esq., won the Silver Cup given by Mrs. Vickers for the best collection of Hybrid Orchids raised from seed, with Cypripedium × Aylingii and Selenipedium × Schrœderæ splendens, both very fine.

Four large and effective groups were staged not for competition, which we have only space to note very briefly. Each contained many good Cattleyas and Lælias, Odontoglossums, Cypripediums, Miltonia vexillaria, Cymbidium Lowianum, and other showy Orchids which are invariably in evidence at this season, and which must be dismissed with this general mention.

Messrs. B. S. Williams and Son, Upper Holloway, contributed a splendid group. Specially noticeable were the very fine Vanda teres, the white Odontoglossum citrosmum album, and the very deep rosy purple O. c. Owenianum, a beautiful O. × elegans, O. triumphans aureum, Edwardii and Hallii xanthoglossum, the brilliant Ada aurantiaca, the rare Bollea Patinii, Cœlogyne pandurata and tomentosa, Oncidium concolor, sarcodes, and Marshallianum, all very fine, Maxillaria Sanderiana, &c.

Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford, staged a brilliant group, including Odontoglossum ramosissimum, the fine O. crispum apiculatum, O. polyxanthum, O. × Coradinei, and O. × Andersonianum, Oncidiums macranthum, Marshallianum, sarcodes, concolor, and cornigerum, Maxillaria Sanderiana, and many others. Nor must we omit a very distinct Vanda, provisionally named V. Charlesworthii, allied to V. cœrulea, which may be a natural hybrid.

Messrs. W. L. Lewis and Co., Southgate, had a very effective group, including the new Microstylis Scottii, the brilliant hybrid Cypripediums, Winifred Hollington and × Aylingii, also C. × Smithii, Cattleya Schilleriana, &c., &c.

Messrs. Cowan, of Liverpool, also staged a fine group, including Miltonia Phalænopsis, Lælia majalis, Dendrobium bigibbum, Oncidum sarcodes, and other commoner but showy things.

F. Hardy, Esq., sent a Dendrobium Wardianum, not for competition, with a single giant flower, and E. Ashworth, Esq., four plants of Cattleya Mossiæ Reineckiana.

Lastly, we may note a very fine specimen of Dendrobium fimbriatum oculatum, in the second prize collection of Stove and Greenhouse Plants won by Miss Lord, Ashton-on-Mersey. It was nearly a yard across and full of flower.

ORCHIDS AT THE ANTWERP INTERNATIONAL EXHIBITION.

By Ch. de Bosschere.

The International Horticultural Exhibition which was held at Antwerp from May 13th to 15th, was a great success in every respect. His Majesty the King of the Belgians honoured the Exhibition with his presence, and expressed his entire satisfaction with the marvellous display.

The section devoted to Orchids, with which we are alone concerned, was remarkable in every respect—for their number, their value, and for their variety, rarity, and novelty. Never in Belgium were these beautiful exotics better represented. It would fill a number of the Orchid Review to give a complete account of them.

The prize given by Her Majesty the Queen of the Belgians was awarded to the splendid general collection staged by M. Charles Vuylsteke, of Loochristy. We may note Odontoglossum expansum, excessively rare and worthy of admiration; O. × mulus Holfordianum, also very rare and beautiful; O. eximia, a superb and unique plant; O. nobilior, one of the rarest of Odontoglossums, with the colour wonderfully developed; the rare Miltonia × Bleuana, obtained by M. A. Bleu, the celebrated Parisian hybridist; and Miltonia Empress Augusta Victoria, with large and splendidly coloured flowers. This admirable collection included 150 distinct species and varieties.

M. Gustave Vincke-Dujardin, of Bruges, carried off the prize given by the City of Antwerp. How can we choose among a collection which exceeded three hundred in number? We renounce the task as too heavy. However, we must cite the admirable dark-coloured variety, Lælia purpurata Souvenir de l'Exposition d'Anvers; the numerous Odontoglossums of inestimable price of this incomparable collection; the O. crispum Souvenir de Scheepsdaele, a spotted variety of enchanting beauty; another O. crispum defying description. Never have we seen such superb Lælias, ranging in colour from the purest whites to the darkest tints. And the Cattleyas and other splendid Orchids in admirable health and freshness, how meritorious they were!

The Gold Medal offered by M. Henri Vanderlinden was unanimously awarded to M. Alfred Van Imschoot. His collection included about three hundred different species, and presented a great botanical value, as it gave an excellent idea of the great variety of form and colour in this immense family. Some of them deserve mention because of the excellent condition of some of the flowers which had long been expanded, as Dendrobium nobile, Cœlogyne cristata, a very remarkable variety of Cattleya Trianæ, and Maxillaria luteo-alba. As forms of transcendent merit we may note the superb example of Brassia Keiliana, with thirty racemes; a well-coloured Miltonia vexillaria, Mormodes luxatum eburneum with a splendid raceme of flowers which were spotted inside with dark purple; Lycaste fulvescens with thirty flowers; the beautiful Cattleya Schilleriana; the very curious Lælia Dayana; the very rare Epidendrum pseudo-Epidendrum; a very fine Odontoglossum polyxanthum; the rare Trichopilia marginata; a charming Odontoglossum ramosissimum; and the very rare Trichopilia Wageneri. Some species were of botanical interest, as Bulbophyllum platyrhachis, of unparalleled singularity; Ornithidium Sophronitis, and Hartwegia purpurea.

M. A. Peeters, of Brussels, carried off the prize for twenty-five species and varieties of cool Orchids; the gold medal given by M. D. Massange de Louvrex for twenty flowering Orchids; and the first prize for twelve large specimens of Orchids in flower. We restrict ourselves to citing the most remarkable among these beautiful species and varieties. These are: Miltonia × Bleuana, the splendid acquisition obtained by M. Bleu, of Paris, from M. vexillaria fertilised with the pollen of M. Roezlii, which fortunate cross yielded the marvellous Orchid which renders him a just tribute of homage. Among the Odontoglossums we may mention the beautiful O × Andersonianum sulphureum and superbum; O × Ruckeri purpureum, whose general colour is a beautiful rosy purple; superb inflorescences of O. Hallii; a beautiful Masdevallia Veitchiana grandiflora with at least thirty flowers and buds; magnificent plants of Epidendrum Wallisii and E. Frederici-Guilielmi; a well-flowered Oncidium macranthum carrying forty flowers and buds; Cattleya Mossiæ and C. M. Reineckiana, and the rare Pescatorea Klabochorum.

M. Florent Pauwels, of Antwerp, obtained a legitimate success with many beautiful and varied Orchids, comprising some large and strong plants, and other smaller, rarer, and more valuable ones. Among the most deserving of our attention we may note: Oncidium ampliatum majus, Miltonia vexillaria, Dendrobium Dalhousieanum, Odontoglossum Hallii with five racemes; Selenipedium caudatum with ten flowers; a large and beautiful Ansellia africana; magnificent Vanda insignis, V. tricolor, V. suavis, and V. s. Rollissoni; enormous plants of Cypripedium villosum aureum, C. Boxallii, and C. × nitens; Dendrobium macrochilum with five racemes, &c.

In a pretty collection of Cypripediums from the same zealous amateur

the most meritorious were, C. niveum, bellatulum, Mastersianum, Lowii, Boxallii atratum, and Selenipedium × Sedeni candidulum.

MM. Jonssens et Vincent had some good Orchids. Their group of Odontoglossum crispum contained some select varieties.

M. le Baron de Baetzelaer exhibited a colossal plant of Oncidium sphacelatum with forty inflorescences and thousands of flowers.

M. Jos. Moens, of Lede, sent forty Cypripediums, of the most select species and hybrids.

M. Jules Hye-Leysen sent an immense Lælia purpurata covered with pretty flowers. Lælio-cattleya × Hippolyta, Cypripedium × Albertianum and Odontoglossum × Cavallianum, three hybrids which received the commendations of all connoisseurs.

We may also call attention to the Orchids sent by Dr. Capart, of Brussels; the immense lot of Odontoglossums of M. D. Massange de Louvrex, and concludė by hoping that the Antwerp Exhibition will tend to expand the taste for Orchids, already so pronounced in Belgium.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE meeting of the Royal Horticultural Society, held at the Drill Hall, James Street, Victoria Street, Westminster, on May 8, was overshadowed by the near approach of the great Temple Show, and the Orchids showed a considerable falling off in point of numbers, though some very interesting exhibits were staged.

The President, Sir Trevor Lawrence, Burford, Dorking (gr. Mr. W. H. White), received an Award of Merit for Dendrobium cretaceum, and a Botanical Certificate for the singular Catasetum Rodigasianum var. tenebrosum. He also sent Cycnoches ventricosum, good plants of Masdevallia caudata Shuttleworthii and M. c. xanthocorys (each with about twenty flowers), Cattleya Mossiæ Wageneri, Lælia purpurata, and the splendid L. p. nobilior.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. H. Ballantine), exhibited two beautiful Dendrobiums, D. nobile Schrœderianum and D. × dellense (D. nobile Schrœderianum ♀ × D. × splendidissimum ♂), both of which received First-class Certificates.

J. Broome, Esq., Sunny Hill, Llandudno (gr. Mr. Shill), sent a flower of Cattleya Mossiæ conspicua, a large and richly coloured form.

T. P. W. Butt, Esq., Arle Court, Cheltenham (gr. Mr. Marsh), sent a splendid branched spike of Oncidium Marshallianum.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), exhibited several plants of Odontoglossum triumphans, showing a consider-

able amount of variation. The best was called Lionel Crawshay, a form with very broad segments of clear yellow, regularly banded with light reddish brown, which received an Award of Merit. He also sent a very fine O. Hallii, a good Lælio-cattleya × Schilleriana, and Vanda suavis Rosefield variety, which latter received a First-class Certificate.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), exhibited Chysis bractescens and Odontoglossum Pescatorei, Hazelbourne variety, a large and beautiful form, the sepals slightly tinged with purple and the petals profusely spotted with violet-purple on their lower halves.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited the rare Masdevallia marginella and Bifrenaria inodora, the latter receiving a Botanical Certificate.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent the remarkable Coryanthes Wolfii (see p. 264 of our last volume), which received an Award of Merit; also spikes of Oncidium roraimense and three varieties of Masdevallia ignea.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), showed Phaius Sanderianus.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), sent a yellow tinted Odontoglossum cirrhosum, Cattleya Mendelii Morganiæ, and a well-grown Cattleya Lawrenceana, with twenty-one flowers, which received a Cultural Commendation.

H. Wheetman, Esq., The Hawthorns, Little Heywood, Stafford, sent Dendrobium Dalhousieanum, D. Devonianum candidulum, and a good Phaius Sanderianus.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, exhibited Selenipedium × macrochilum giganteum (S. caudatum Lindeni ♀ × S. × grande ♂), an unusually large form, which deservedly received a First-class Certificate; the very interesting Disa langleyensis (D. racemosa ♀ × D. tripetaloides ♂), a pale rose form with spotted galea, about twice the size of the pollen parent, which received an Award of Merit; Masdevallia × caudato-Estradæ, and M. × Parlatoreana.

Messrs. Charlesworth and Co., Heaton, Bradford, exhibited Odontoglossum polyxanthum, O. crispum heatonense, a purple-spotted variety; a good white O. crispum, and O. c. apiculatum—a fine white form with a single large cinnamon blotch on the lip and each of the three sepals; which latter received an Award of Merit.

Messrs. T. Cripps and Co., Tunbridge Wells, showed a small group of well-grown Orchids, including Dendrobium Dearei, with four spikes, and several Cypripediums, including C. Druryi.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, showed the pretty Warscewiczella Wailesiana and Microstylis Scottii, the latter receiving a Botanical Certificate.

Messrs. B. S. Williams and Son, Upper Holloway, exhibited Odontoglossum citrosmum Owenianum, a very dark rose-coloured form, and O. triumphans atratum, with flowers curiously banded with dark chestnut-brown.

THE TEMPLE SHOW.

In spite of the sudden spell of unseasonably cold weather which immediately preceded it, and the wet of the opening day, the Seventh Annual Show of Royal Horticultural Society at the Inner Temple Gardens was certainly a highly successful one. Fortunately, the two remaining days were finer, and on each day there was a large concourse of visitors. The extension of the Show over a third day was an experiment which we hope has been successful, so far as the coffers of the Society are concerned, though there was some apprehension as to the effect of a third day's exposure in the tents in such unseasonably cold weather. The Orchids were at least equal to those exhibited on the last two occasions, which is saying a great deal, and owing to the provision of a little more space were rather less crowded than usual.

In its broad features the Show much resembled that of last year, several of the old exhibitors occupying the same spaces, though naturally there were many differences in detail. Cypripediums we fancied were rather less prominent than usual, but many good, and a few choice, forms were to be seen, notably the beautiful albino of C. callosum exhibited by Messrs. Sander. We were also a little surprised to find no single entry for the Williams' Memorial Medal offered for the best group of these plants. Many of the common showy Orchids were well represented in nearly every group, such as Cattleyas Mossiæ and Mendelii, Lælia purpurata, Odontoglossum crispum in variety, and Miltonia vexillaria; also Cymbidium Lowianum, Cattleya Skinneri, Epidendrum vitellinum, Oncidiums Marshallianum, concolor, and ampliatum, Odontoglossums triumphans, Pescatorei, and the various forms of O. × Andersonianum, together with a few other things, were pretty generally represented.

Baron Sir Henry Schröder, The Dell, Egham (gr. Mr. H. Ballantine), staged an exceedingly rich and valuable group (not for competition), with a frontage of thirty feet, and very tastefully arranged, the centre being occupied by a fine group of Vanda teres. One remarkable feature was a fine series of choice varieties of the charming Odontoglossum crispum, of which four received the award of First-class Certificates, namely—O. c. excelsior, Rex, xanthotes, and Wolstenholmiæ. The beautiful O. × Andersonianum superbum and O. triumphans, Dell variety, also received similar awards. O. crispum Bonnyanum, which bore a twelve-flowered spike, and O. c. Chestertoni were also extremely beautiful. Several plants of O. × excellens were included, one of them bearing a spike of nineteen flowers,

and another, with longer and narrower segments, as many as fourteen. Other fine Odontoglossums were, O. Pescatorei leucoxanthum, O. × Ruckerianum with much-branched spike of richly-coloured flowers, O. ramosissimum, O. × elegans, O. cirrhosum, O. Hallii bearing a sixteen-flowered spike, and the rare and very beautiful O. × Horsmanii. On the second day was added a remarkable and richly-coloured natural hybrid, perhaps nearest to O. × Coradinei, whose flowers were only just expanding. The collection also contained fine specimens of Vanda tricolor, Lælia purpurata, Selenipedium × grande and S. × Schrœderæ (both very fine), Epidendrum prismatocarpum, Maxillaria præstans, Dendrobium Dearei, Cypripedium Lawrenceanum, with twelve flowers richly suffused with purple on the dorsal sepal, a large Masdevallia ignea covered with flowers and quite a picture, M. Wageneriana, M. hieroglyphica, and many fine forms of Cattleya Mendelii, Mossiæ, &c. Cut flowers were also shown of Cypripedium Lawrenceanum Hyeanum, C. Stonei platytænium, a very fine C. Sanderianum, many Cattleya Mossiæ Wageneri, the beautiful Phalænopsis × John Leden, and others. Last, but not least, must be mentioned the superb specimen of Cœlogyne Dayana, with twenty-four racemes and 930 flowers, which is even finer than when exhibited a year ago—a marvel of good culture.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), contributed a brilliant group of similar extent (not for competition), which also contained a number of botanical rarities for which this collection is famous. Among these were the remarkable Bulbophyllum barbigerum with its feather-like mobile lip, the pretty Australian Sarcochilus Fitzgeraldi with white and pink flowers, a Microstylis with marbled leaves and unusually large flowers, Geodorum Augusti, Angræcum arcuatum, Cleisostoma crassifolium, and two fine clumps of the singular British Neottia Nidus-avis from the woods at Burford. Here was the charming Cochlioda Noetzliana with twenty-one flowers on a branched spike, a good Masdevallia rosea with over twenty flowers, M. × splendida, a fine Odontoglossum crispum with fourteen flowers on the spike, O. × Wilckeanum with eleven, Dendrobiums Maccarthiæ, polyphlœbium, Jamesianum and secundum, Aërides Houlletianum, Fieldingii and Savageanum, Stauropsis lissochiloides, Anguloa Ruckeri, Oncidium lamelligerum, Epidendrum-arachnoglossum and Frederici-Guilielmi, Cypripedium × conco-Lawre with two-flowered spike, the fine C. × Eleanor (C. × selligerum majus × C. superbiens), Cattleya Schilleriana, a very fine C. Mossiæ Wageneri, and a large number of showy Orchids in good varieties.

The Duke of Northumberland, Syon House, Brentford (gr. Mr. G. Wythes), staged a neat and effective group, to which a Silver Cup was awarded. It consisted chiefly of well-grown plants of the usual showy Orchids, and included Vanda teres, Cyrtopodium punctatum, Oncidium

sphacelatum, Cymbidium Lowianum, Cattleya Skinneri and other good Cattleyas, Odontoglossums, &c.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), staged a fine group, to which a Silver Cup was awarded. It contained a number of good forms of Odontoglossum crispum, three of them bearing spikes with thirteen flowers, and several very prettily marked, a capital plant of O. × Coradinei with five spikes and an aggregate of fifty-eight flowers, a good O. × Ruckerianum, O. × Andersonianum, Hazelbourne variety, with broad segments, O. citrosmum, a good Oncidium concolor, the rare Cymbidium tigrinum with six spikes and sixteen flowers, the charming Miltonia Warscewiczii with twenty flowers, Cypripedium Chamberlainianum, and various other showy Orchids.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), contributed a few excellent specimens, for which a Silver Cup was awarded. Lælia purpurata Hardyana was a noble specimen of a richly-coloured variety, which was awarded a Cultural Commendation; Cattleya Mossiæ was also a gigantic plant loaded with flowers; and C. Skinneri had eight flowers on one spike. The others were, Phalænopsis speciosa, Hardy's variety, of a peculiar brownish purple colour, the beautiful Odontoglossum crispum Bonnyanum, and Cypripedium bellatulum, Hardy's variety, which received a First-class Certificate. This had light-yellow flowers, veined and spotted with purple-brown, and a white lip with a few spots.

Messrs. F. Sander and Co., St. Albans, received a Silver Cup for a large and magnificent group, containing several sterling novelties. First and foremost we may name the beautiful Cypripedium callosum Sanderæ, an albino, having white flowers striped with emerald-green, but more graceful in shape than C. Lawrenceanum Hyeanum, to which it is comparable in colour. Phaius × Owenianus (P. Oweniæ ♀ × P. Humblotii ♂) is a richly-coloured hybrid of excellent shape. Cattleya Mossiæ Imperialis is a very large and richly-coloured form, with the sides of the lip veined with golden-yellow. These three each received First-class Certificates. Lælio-cattleya × Frederic Boyle is a very remarkable hybrid derived from Cattleya × Trianæ ♀ and Lælia anceps ♂, the flower white and most like the latter, except that the lip approaches C. Trianæ in shape, and is tinged with bright rose in front. It received an Award of Merit; as did also Odontoglossum crispum Massangeanum, a broad and richly spotted form, Cattleya Mendelii picta, and Lælio-cattleya × Aylingii, a plant of unrecorded parentage allied to L.-c. × Canhamiana. Here were many Cattleya Mossiæ Wageneri and C. M. Reineckiana, several good C. granulosa, C. Dowiana chrysotoxa, very striking and curiously out of season; C. Warneri, good C. Skinneri alba; several good varieties of C. Mendelii, Lælia tenebrosa, some excellent Miltonia vexillaria, one unusually large, and another very dark; a fine Odontoglossum hastilabium with nine

spikes, a well-flowered Epidendrum Wallisii, Masdevallia triaristella, Phalænopsis tetraspis, Cochlioda Noetzliana, and many good Odontoglossums and other showy things; the beautiful white Sobralia macrantha Kienastiana, a white ground Odontoglossum × Wilckeanum bearing a fine spike of eighteen flowers, Cattleya × Krameriana, many Cypripedium Chamberlainianum, &c. At the back were many plants of the graceful Cœlogyne Dayana, called the "Necklace Orchid," and at one end a marvellous clump of Oncidium ampliatum, its numerous arching branched spikes being computed to bear over five thousand flowers.

Messrs. Hugh Low, and Co., Upper Clapton, N.E., contributed another very fine group, which was awarded a Silver Cup. Their Lælia purpurata, Odontoglossums and Cattleyas were very fine, C. Mossiæ splendens especially being a well-formed and gigantic flower. Cypripedium niveum and bellatulum were good, also C. Parishii and Selenipedium × Schrœderæ. The group also contained a fine Stanhopea Amesiana with three of its waxy flowers, Oncidiums Gravesianum and monachicum, Odontoglossums × Wilckeanum and gloriosum, Saccolabium curvifolium, a striking Zygopetalum allied to Z. grandiflorum, &c.

Messrs. Charlesworth and Co., Heaton, Bradford, also received a Silver Cup for a fine and effective group, containing some capital Oncidium concolor, one with seven spikes, fine O. Marshallianum, some fine Lælia purpurata, one large plant with sixty-six flowers. Grammatophyllum Rumphianum with two long racemes, the rare Gongora bufonia, Stanhopea graveolens, Miltonias spectabilis and Roezlii, Epidendrum vitellinum, Cypripediums, many Odontoglossum crispum, Cattleyas, and other fine Orchids.

Messrs. B. S. Williams and Co., Upper Holloway, N., exhibited two large and effective groups, and were awarded a Silver Cup. Besides the usual showy things, which were in fine condition, we observed Trichopilia lepida with eight flowers, Bollea Patini, a nice plant of Oncidium longipes, a good O. sarcodes, and two very fine O. concolor, Phalænopsis speciosa, the rare and pretty Ornithocephalus grandiflorus, the scarlet Cochliada Noetzliana, Cœlogyne pandurata, Odontoglossum baphicanthum, and many other fine and interesting things.

Messrs. James Cypher, Cheltenham, also received a Silver Cup for a very large and effective group, in which were some splendid forms of Lælia purpurata, Cattleyas, Odontoglossums, Miltonia vexillaria and other showy things. We also noted Diacrium bicornutum, Dendrobiums × rhodostoma, Falconeri gigantum, Jamesianum and Parishii, Epidendrums × O'Brienianum and radicans, Oncidiums concolor and cucullatum, both very good; Cypripediums Exul and Chamberlainianum, a fine plant of Cattleya Skinneri, &c.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins), staged

a rich and effective group, which was awarded a Silver-gilt Flora Medal. It included a fine series of Cattleya Mossiæ varieties, C. Schilleriana, Odontoglossum luteopurpureum, many good O. crispum, the large O. Pescatorei magnificum, O. × Coradinei, Masdevallia rosea, Bulbophyllum saurocephalum, Lycaste Deppei and other good things.

Messrs. W. L. Lewis and Co. also received a Silver-gilt Flora Medal for an effective group, containing Lælia purpurata in variety, Cattleyas Mossiæ and Mendelii, Microstylis Scottii, Lælia majalis, Odontoglossum Sanderianum, Oncidium Harrisonianum, Lycaste aromatica, Cypripediums × Aylingii and × Smithii, Lælio-cattleya × Schilleriana, &c. Cattleya Mendelii Lewisii is a fine form, which received an Award of Merit.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), received a Silver Flora Medal for a good and effective group, including a fine Sobralia macrantha, Maxillaria tenuifolia, some fine Cattleyas Odontoglossums, Phalænopsis, &c. A very fine Oncidium Marshallianum superbum received an Award of Merit, and Schomburgkia tibicinis, with seven flowers, a Botanical Certificate.

Mr. P. McArthur, Maida Vale, W., also contributed an effective group, which gained a Silver Flora Medal. It included a very fine Lælia tenebrosa with five spikes, Odontoglossum nebulosum candidulum, Oncidiums phymatochilum and macranthum, Cypripedium Exul, C. bellatulum nigrum with very dark blotches, C. Chamberlainianum, and various other showy Orchids.

Messrs. Collins and Collins, Willesden, also received a Silver Flora Medal for a good group, containing many fine Cymbidium Lowianum, Dendrobium clavatum, Oncidium concolor, Lælia purpurata, &c.

Malcolm S. Cooke, Esq., Kingston Hill (gr. Mr. Buckell), staged a neat group, which received a Silver Banksian Medal. It contained Cypripedium niveum, Epidendrum vitellinum, Oncidium macranthum, Odontoglossums, &c.

M. Jules Hye-Leysen, Conpure, Ghent, exhibited a vigorous plant of the beautiful deep yellow and white Odontoglossum Vuylstekeanum, with three spikes and twenty-seven flowers, which deservedly received a First-class Certificate. He also showed an eight-flowered spike of Lælio-cattleya × elegans Turneri.

M. A. A. Peeters, St. Gilles, Brussels, exhibited a handsome Odontoglossum crispum guttatum, and O. c. Capartianum, the latter a heavily blotched and handsome variety, which received an Award of Merit.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), exhibited Odontoglossum × tentaculatum with ten good flowers, a fine Lælia purpurata, Miltonia vexillaria, and Cattleya Mendelii Mrs. Crawshay, a fine blush form with the front part of the lip deep purple-crimson, to which an Award of Merit was given.

H. Shaw, Esq., Stamford House, Ashton-under-Lyne (gr. Mr. Smith), exhibited Phalænopsis Mannii, Cattleya Mossiæ Shawiana, a light form without either yellow or crimson on the lip, and Odontoglossum crispum Trianæ, the latter receiving an Award of Merit.

C. Young, Esq., The Thorns, Sevenoaks (gr. Mr. Ryder), received an Award of Merit for a very beautiful Odontoglossum × Andersonianum, Young's variety, with broad richly marked segments.

Mrs. Baker, Wimbledon Park (gr. Mr. Goodchild), exhibited a splendidly grown Odontoglossum crispum bearing five spikes, ranging from six to nine flowers each, the segments broad and of great substance.

M. Vincke-Dujardin, Scheepsdeale, Bruges, exhibited a fine group of twenty-five Odontoglossum crispum. The plants were exceedingly well grown, and we counted twenty flowers on one spike with two small side branches, two with sixteen, one with fifteen, two with fourteen, and others with thirteen, twelve, and eleven, of good size and substance. A few had more richly coloured flowers but fewer in number.

Messrs. Linden, L'Horticulture Internationale, Brussels, exhibited a very fine plant of Cochlioda Noetzliana, with about twenty-five spikes of its beautiful flowers, an extensive series of named varieties of Lælia purpurata, many being cut spikes, the small deep rose Peruvian type of Miltonia vexillaria, a few good blooms of Cattleya Aclandiæ, Odontoglossum Pescatorei Lindeniæ, with a single violet-purple blotch on each segment, and a good Lælio-cattleya × Schilleriana.

W. R. Lee, Esq., Audenshaw, Manchester (gr. Mr. Billington), exhibited Cypripedium × Winifred Hollington and Lælio-cattleya × Phœbe, both very beautiful.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited cut blooms of Miltonia × festiva, a natural hybrid between M. flavescens and M. spectabilis, and M. vexillaria, Cambridge Lodge variety.

Messrs. James Veitch and Sons, Chelsea, exhibited a neat group of their new and pretty Disa × langleyensis, mentioned in our Report of the previous meeting.

CORRESPONDENCE, &c.

J. M., Hoyland Hall, Barnsley.—2 Lælia purpurata, 1 L. p. rosea, 3 L. p. Aurorea.

H. H., Whitby.—Three flowers on the spike of Cypripedium Stonei is not unusual ; in some cases the markings are almost, or quite, absent from the dorsal sepal.

H. C., Camberwell.—Miltonia × festiva.

T. C. H., Richmond.—Many thanks. Next month.

S. G. L., Beckenham.—This and several other matters are unavoidably postponed for want of space.

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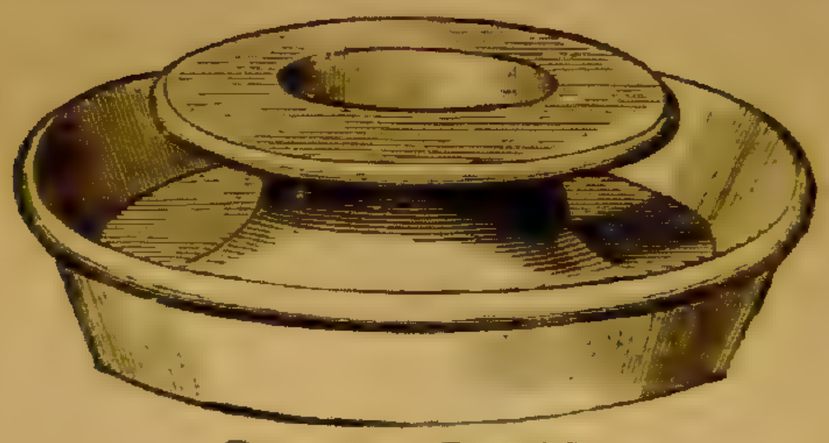

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Contents.

	PAGE		PAGE
Notes	193	Dendrobium veratrifolium	207
Obituary	194	Phaius bicolor var. Oweniæ	208
Cattleya citrina aurantiaca	194	Stanhopea Calceolus	208
Dr. Hodgkinson's Collection	195	A Group of Phalænopsis	209
Cypripedium callosum Sanderæ ...	197	P. Aphrodite (Fig. 20)	209
Novelties	198	P. Schilleriana (Fig. 21)	209
Odontoglossum × Coradinei mirabile, &c.	198	P. × leucorrhoda (Fig. 22)... ...	210
Bifrenaria Charlesworthii, &c. ...	199	P. × L. var. Cynthia (Fig. 23) ...	210
Cattleya Mossiæ Peetersii	199	Odontoglossum crispum var. Baroness Schröder	210
Hybrid Odontoglossums	200	Odontoglossum crispum var. grande-maculatum	211
The Hybridist	202	Nursery Notes	211
Dendrobium × Lutwycheanum, &c.	202	Calendar of Operations for July ...	215
Hybrid Disas at Kew, &c.	203	Orchid Portraits	219
Orchids at Twickenham	204	Continental Notes	220
Orchids at Highbury	204	Lælio-cattleya × elegans Turneri ...	222
Dies Orchidianæ	205	Orchids at the Royal Horticultural Society	222
M. Barbosa Rodrigues' Brazilian Cattleyas	206	Correspondence, &c.	224
Schomburgkia tibicinis	207		

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THE ORCHID REVIEW.

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NOTES.

THE prize offered by the Royal Horticultural Society on June 12th for the best hybrid Orchid not exhibited before January 1, 1894, was awarded to Messrs. F. Sander and Co., St. Albans, for Phaius × Owenianus, which also received a First-class Certificate at the recent Temple Show. It is a very beautiful hybrid, and the first derived from P. Humblotii, which it approaches in shape, while the colour is more like that of the other parent, P. Oweniæ.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during July, on the 10th and 24th respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

The meetings of the Orchidéene of Brussels are suspended during July and August, the next meeting being announced for September 9th.

The sale of the second portion of the Pickering Lodge Collection is announced to be held on the premises on July 11th and 12th at half-past 12 o'clock each day.

We also note that the collection of the late T. R. Watt, Esq., of Chislehurst, is to be sold by auction during the month, at Messrs. Protheroe and Morris' Rooms. The collection contains some choice things, one of which is the Cattleya labiata elegans noted at page 360 of our last volume.

The number of the *Journal des Orchidées* for May 1st is devoted to an alphabetical list of the species, varieties, and hybrids of the genus Cypripedium, by M. Otto Ballif.

The June number of the *Kew Bulletin* contains a ninth Decade of New Orchids described by Mr. Rolfe, which are more particularly noted on another page. Among them is the new Dendrobium Hildebrandii introduced by Messrs. Hugh Low and Co.

Cycnoches Loddigesii has been noted in our pages on more than one occasion. A plant in the establishment of Messrs. Linden, L'Horticulture Internationale, Brussels, has now produced a raceme of five male flowers.

Mr. A. H. Kent, A.L.S. of the Royal Exotic Nursery, has received one of the Veitch Memorial Medals for the year, largely, we believe, in recognition of his work in connection with Messrs. Veitch's important *Manual of Orchidaceous Plants*. His portrait appears in the *Gardeners' Chronicle* for June 16th.

OBITUARY.

We regret to hear of the death, on June 2nd, of Mr. Frederick James Serle Horsman, of the firm of Messrs. Fred. Horsman and Co., of Colchester, at the age of 52 years. Mr. Horsman had suffered acutely from Bright's disease, but had been able to attend to his business to within a few days of his death. He was a well-known grower and importer of Orchids. A portrait of the deceased gentleman appears in the *Gardening World* for June 23rd. The business will be continued by his eldest son, Mr. F. R. Horsman.

CATTLEYA CITRINA AURANTIACA.

Some time ago an unusually fine and richly coloured variety of Cattleya citrina appeared in several collections, for which the above name has been proposed (Gower in *Orchid Album*, ix. sub., t. 472). It flowered with H. J. Ross, Esq., of Florence, Italy, in 1890, with Messrs. James Veitch and Sons, and Mr. Bull, of Chelsea, a year later, and afterwards with R. H. Measures, Esq., of Streatham. And now it has flowered with C. Eastwick-Field, Esq., Hurst House, Midhurst, Sussex, from whom we have received a flower. It is a little larger than the type, the sepals and petals are much more spreading, while the front lobe of the lip is distinctly elongated and about an inch long. Besides which the whole flower is more richly coloured than usual, in fact, very deep yellow approaching orange. The fact of its having appeared in several collections and retaining its character proves that it is no mere accidental variation, but a well-marked variety of superior beauty. Its exact origin is uncertain, also whether the several plants known could be traced to the same source, but in any case its appearance is very interesting, as this particular species usually shows very little variation.

DR. HODGKINSON'S COLLECTION.

A VERY interesting and representative collection of Orchids is the one brought together by Dr. Alex. Hodgkinson at his residence, The Grange, Wilmslow, Cheshire, where five houses are more or less completely devoted to them. The usual showy species are, of course, well represented, but we note with pleasure that some of the rarer and less easily grown kinds are specially looked after, some of them succeeding very well. Bolleas, Aganisias, and the rare Coryanthes Wulfii, may be mentioned among these difficult subjects; but as efforts are made to grow them under something like natural conditions, it is hoped that they will prove less intractable than formerly.

The Odontoglossum House, which is span-roofed, contains a typical collection of cool Orchids, the smaller ones being suspended from the roof. The stages are part open and part covered with wet gravel, the former being a recent introduction. Among the plants observed during a recent visit were many plants of Odontoglossum crispum, a fine O. Pescatorei, the inflorescence showing twelve side branches and fifty-two flowers, the rare O. nævium, O. nebulosum and bictoniense coming into flower, two good O. Reichenheimii, various O. Cervantesii, O. C. roseum, O. Ærstedii, and others. A plant of Cochlioda Noetzliana bore two spikes; a plant of Oncidium incurvum was pushing seven spikes, while O. macranthum was flowering well. Nanodes Medusæ succeeds well suspended in this house, its buds being not quite expanded. Disa grandiflora was grown here in a peat bed, a pane of glass being removed near it, and a batch of Epidendrum vitellinum with twenty spikes close by. E. syringothyrsus grows well, but has not yet flowered. Here were also Cypripedium insigne and Boxallii, various Masdevallias, some being in flower, Restrepia antennifera, and a batch of Sophronitis grandiflora.

In the Mexican House was a specially interesting sight—a batch of twenty plants, of which many were flowering, seventeen flowers and buds being counted. A few spikes were two-flowered. The other Mexican Lælias were also doing well, and included many plants of L. anceps, one being still in flower, L. albida, and L. autumnalis; also a good batch of Cattleya citrina in thriving condition. Here were also some Sophronitis grandiflora, Cœlogyne cristata, Dendrobium Falconeri, &c. The smaller Lælias are suspended near the glass, and the larger ones grown in pots underneath, no shading being used. Care is taken to secure a good growth, and then by means of plenty of air and a limited supply of water to mature it thoroughly. Very little water is given to Lælia majalis until flowering is over, which is in accordance with its natural requirements, as this beautiful species blooms just at the commencement of the rainy season. A

good growth is next induced, by liberal waterings, and finally a long rest, and the success attained shows that the treatment is correct.

In the Cattleya House are many interesting things, including a good plant of the very rare Epicattleya × guatemalensis (the one other we know of being at Highbury), a good plant of Lælia Digbyana (so promising for the hybridist) with two Cattleya Dowiana aurea in splendid health, good plants of C. Rex, a giant specimen of C. Trianæ three feet across, a good batch of Vanda cœrulea, which succeeds well here, as do also Odontoglossum grande and O. citrosum, Cœlia bella, Epidendrum nemorale, Trichosma suavis, Anguloas, Sophronitis violacea, and Ornithidium Sophronitis. Various plants of Cattleya Mossiæ, Mendelii, Schrœderæ, and Skinneri were in flower, also Lælia purpurata and cinnabarina, Schomburgkia tibicinis, with six flowers and buds, nine having already gone off, Oncidium Marshallianum with twenty-three handsome flowers, O. hastatum, Aërides japonicum, Dendrobium Jamesianum, Maxillaria Sanderiana, a nice batch of Miltonia vexillaria, and many others.

The Warm House contains many good things, including the rare Dendrobium senile, whose pseudobulbs are covered with long hairs, Stauropsis lissochiloides (Vanda Batemanii) throwing a fine spike, a plant of the rare Cœlogyne Sanderiana, Dendrobium Maccarthiæ, Ponthieva maculata, &c. About fifty healthy plants of Phalænopsis are grown in teak cylinders on the north wall, and include the beautiful P. Mariæ, P. violacea showing for flower, &c., two plants of P. Schilleriana being exceptionally strong. Here are also a few Angræcums which are growing well. Several plants of Chysis bractescens were also growing vigorously. Many interesting things were in flower, including several plants of the charming little Trichocentrum tigrinum, Miltonia Roezlii, Aërides Fieldingii, numerous Cypripediums and Selenipediums, and a particularly fine plant of Dendrobium Devonianum, one of the pseudobulbs being four feet long and wreathed in flowers to the number of eighty-seven, several racemes bearing five flowers each. Among the Cypripediums were Chamberlainianum, a fine plant of niveum grown in limestone with seven flowers, and a good philippinense, deserve special mention. In order to commemorate the visit we specially crossed C. philippinense with niveum, and the last named with Chamberlainianum—this in lieu of planting a tree—and hope that in due time seedlings will result.

A few Orchids were also placed in the Rose House, including many good plants of Dendrobium nobile, D. chrysanthum with twelve spikes, Calanthe × Veitchii, and a good plant of Oncidium crispum with a panicle of twenty-six buds. In a cold house were plants of several hardy Cypripediums, including C. acaule in flower, and various Cape Orchids, chiefly Disas and Batyriums.

Dr. Hodgkinson takes a great personal interest in his collection, and is

specially impressed with the importance of growing the plants as far as possible under natural conditions, and has made a large series of notes of the climate, rainy seasons, &c., of the countries from which they come. It is well known that different Orchids have different periods of growth, some being active in the winter when cultivators would prefer them to be at rest. Dr. Hodgkinson believes that these peculiarities should be studied, as he attributes many failures to the practice of making the plants grow out of their proper season. In fact, he proposes to set apart a house and keep it at a growing temperature throughout the year, moving the plants in as their season of growth arrives, and then taking them out to mature.

He also takes a great interest in hybridising, and raising seedlings. At the present time many pods of good crosses of various genera are approaching maturity, while others are in various stages of germination. One particularly interesting cross of which seeds are germinating is Lælia majalis × cinnabarina, while good seeds of L. Dayana × Sophronitis grandiflora have been sown. A pod of Lælia harpophylla × Dendrobium Wardianum is swelling, but the reverse cross refused to take. We need not go into further details here, because the doctor promises to send some notes on this subject, which we are sure will be interesting to our readers.

A very ingenious method of indicating the qualities of an Orchid deserves notice, as we have not seen it in use elsewhere. Most cultivators use a series of crosses, from one to as many as six, to indicate quality, but Dr. Hodgkinson's method is much more graphic. He assigns to colour, form, and size (taking them thus in alphabetical order), from one to three points each—thus, 1 = average, 2 = above average, 3 = exceptionally good. A label may bear the sign "1. 2. 3." or "3. 2. 1." &c. The first means, colour ordinary, form above average, size exceptional; the second, colour exceptional, form above average, size ordinary; which seems to us a decided improvement on the old method, and deserves to be widely adopted.

So much for this very interesting and representative collection, of which we hope to hear more on some future occasion.

CYPRIPEDIUM CALLOSUM SANDERÆ.

A flower of this beautiful variety has been kindly sent by R. H. Measures, Esq., The Woodlands, Streatham, where it also flowered in October of last year. It may briefly be described as a C. callosum from which every trace of purple has vanished, leaving the flower light green and white. It is splendidly developed, the dorsal sepal being barely under two and a half inches broad. Mr. Measures' plant is believed to be from the same source as the one recently shown by Messrs. Sander. A flower of C. Lawrenceanum Hyeanum is also sent, showing its similar colour but very different shape. It is very curious that the allied C. barbatum should have been in cultivation for so much longer a period, and yet no albino of it has hitherto appeared.

NOVELTIES.

ODONTOGLOSSUM × CORADINEI VAR. MIRABILE, Rolfe.—A remarkably distinct and handsome Odontoglossum has appeared in Baron Schröder's rich collection at The Dell, Egham, which on careful examination shows such unmistakable affinity with O. crispum and O. Lindleyanum as to leave no doubt of its being a natural hybrid between them. It must therefore be classed as an exceptional variety of O. × Coradinei. The flower measures three inches in diameter across the petals, which latter are eight lines broad. The ground colour is ivory white when first opening, but afterwards pure white, while the blotches are bright cinnamon brown. About two-thirds of each sepal is taken up by the latter colour, apparently by two or three very large blotches which are nearly confluent in one. The petals also have one large blotch above the middle, and two or three small ones near the margin below. The disc of the lip bears a large cordate-shaped blotch, leaving a white tip and very narrow white margin, while the crest and disc are bright yellow, streaked with brown. The shape of the lip and crest, as well as the wings of the column and arrangement of the blotches, all show unmistakably the influence of O. Lindleyanum added to the characters of O. crispum. It is by far the most striking variety of O. × Coradinei which I have seen, the contrast of colour being very effective. It received a First-class Certificate from the Royal Horticultural Society on June 12th, under the name of O. crispum mirabile.

DENDROBIUM HILDEBRANDII, Rolfe. A handsome species collected in the Shan States by H. H. Hildebrand, Esq., who sent it to Messrs. Hugh Low and Co., of Clapton, with whom it flowered last spring. It has the habit of a strong D. signatum, and light yellow flowers whose segments are twisted as in D. tortile. It is somewhat variable in colour, and is said to grow in magnificent huge masses, as many as fifteen hundred having been counted on a single clump.—*Kew Bulletin*, 1894, p. 182.

DENDROBIUM HAMATUM, Rolfe. A member of the Pedilonum section, introduced from Cochin China by M. A. Regnier, of Fontenay-sous-bois, France, who flowered it in April last. The flowers are borne in racemes, light whitish yellow striped with purple, and the chin of the lip an inch long, and hooked, whence the name.—*Kew Bulletin*, 1894, p. 183.

ERIA CINNABARINA, Rolfe. A Bornean species of the section Hymenaria, whose flowers, including the racemes, pedicels, and bracts, are deep cinnabar-orange coloured. It flowered with Messrs. Linden, L'Horticulture Internationale, Brussels, in April last.—*Kew Bulletin*, 1894, p. 183.

CŒLOGYNE SWANIANA, Rolfe. A Philippine species allied to C. Dayana and C. Massangeana, which was introduced by Messrs. F. Sander and Co., St. Albans, and flowered in their establishment in April last.—*Kew Bulletin*, 1894, p. 183.

EPIDENDRUM ELLISII, Rolfe. This handsome Columbian species

received a First-class Certificate from the Royal Horticultural Society in April last, when exhibited by Welbore S. Ellis, Esq., Hazelbourne, Dorking. The flowers are carmine-rose. It is allied to E. Lindeni, Lindl.—*Kew Bulletin*, 1894, p. 184.

BIFRENARIA CHARLESWORTHII, Rolfe. Introduced from the province of Minas Geraes, Brazil, by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford, with whom it flowered in August of last year, and subsequently at Kew. It is allied to B. racemosa, Lindl., but has a hairy lip.—*Kew Bulletin*, 1894, p. 184.

CAMARIDIUM LAWRENCEANUM, Rolfe. A pretty little species allied to C. purpuratum, Lindl., for which Sir Trevor Lawrence, Bart., Burford, Dorking, received a Botanical Certificate in March last. The sepals and petals are yellowish white, the former spotted with red-purple, especially on the back, and the lip deep purple with white apex. Its origin is not recorded.—*Kew Bulletin*, 1894, p. 185.

ONCIDIUM LUCASIANUM, Rolfe. A pretty little species of unrecorded origin, for which Messrs. F. Sander and Co., St. Albans, received an Award of Merit in April last. The flowers are yellow, a few being abortive. It is a member of the Rostratæ group, but has the lateral sepals united.—*Kew Bulletin*, 1894, p. 185.

SACCOLABIUM LONGICALCARATUM, Rolfe. A small pinkish purple species, with long straight spur, which flowered with Messrs. Charlesworth, Shuttleworth and Co., in April last. It was introduced from Burma with Cypripedium Charlesworthii.—*Kew Bulletin*, 1894, p. 186.

PODOCHILUS LONGICALCARATUS, Rolfe. A native of Borneo and the Philippines, which has recently been introduced to cultivation by Messrs. Linden, L'Horticulture Internationale, Brussels. It is allied to P. unciferus, Hook. f., and has been confused with it, but has a far longer chin. The flowers are semi-pellucid white, the segments being more or less tipped with rosy purple.—*Kew Bulletin*, 1894, p. 186.

CATTLEYA MOSSIÆ PEETERSII.

A flower of this brilliantly-coloured Cattleya has been sent by M. A. A. Peeters, of St. Gilles, Brussels, which shows it to be one of the darkest forms of C. Mossiæ yet known. It appeared in 1883, in an importation of C. Mossiæ from Venezuela, and two years later was described as Cattleya Peetersii (Andre in *Rev. Hort.*, 1885, p. 271). It may be compared with C. labiata Peetersii (*supra*, p. 78) as regards its deep saturated rosy-purple colour, though neither so distinctly flamed in the centre nor yet lilac at the margin. The sepals show the same brilliant colour, and the lip is very little paler, except on the sides, while the yellow of the throat is very much reduced. It is a large, well-formed, and very richly-coloured variety, and having flowered for so many years is certainly quite constant in character.

HYBRID ODONTOGLOSSUMS.

(*Continued from page* 141.)

ODONTOGLOSSUM NOBILI-TRIUMPHANS.—This is a well-known and very beautiful hybrid, and further interesting on account of its having been twice raised artificially, a fact which should be taken well to heart by those who are so sceptical about the existence of natural hybrids.

It originally appeared in 1881, in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, having been imported by Messrs. Hugh Low and Co., of Clapton, and is said to have been regarded as a yellow Pescatorei by the collector. It was described as Odontoglossum × excellens, by Reichenbach, who remarked :—" If a guess were permitted, I would suggest that this might be natural hybrid between Odontoglossum Pescatorei and tripudians." Messrs. Veitch, in publishing their *Manual*, suggested O. triumphans as an alternative parent instead of O. tripudians, and, better still, proceeded to test the matter by making the cross in question, with the result to be presently seen.

Three years later another plant appeared with Messrs. Hugh Low and Co., which Reichenbach at first described as O. Vuylstekeanum var. maculatum, though he afterwards admitted and corrected his error.

The same year a plant appeared with Messrs. F. Sander and Co., of St. Albans, which was described under the name of Odontoglossum × stellimicans, by Reichenbach, who remarked that it appeared with O. Pescatorei and "may be a mule between this and O. triumphans or tripudians, or even Lindleyanum." It can hardly belong to the hybrid we last considered, where Reichenbach's last alternative would place it, and the hybrid from O. nobile and tripudians is not certainly known. The colour of the flower as well as the shape of the lip and column-wings are those of the present hybrid. I only know it from the description.

O. × eugenes appeared in 1886, in the collection of the Duke of Sutherland, at Trentham, having flowered out of an importation made by Messrs. James Veitch and Sons, of Chelsea. The sepals and petals are longer and more acuminate than usual.

The variety chrysomelanum appeared in 1888, in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking. The sepals and petals are wholly yellow and spotted all over.

From this time forward it became more common, as plants of it appeared in several different collections, having been purchased as one or the other of the parent species, and some of them were afterwards exhibited as yellow forms of O. Pescatorei.

O. × Brandtii appeared in the collection of Herr Brandt, at Berlin, having flowered out of one of Messrs. Sander's importations. It was figured and described as a new species, though it evidently belongs here.

O. × dellense appeared in 1891 in the collection of Baron Schröder, The Dell, Egham, and was described as a natural hybrid between O. Pescatorei and prænitens. It is, however, a heavily spotted form of O. × excellens. O. prænitens is an almost unknown plant with very different lip.

In June, 1891, a hybrid flowered in the establishment of Messrs. James Veitch and Sons, of Chelsea, which had been raised by crossing O. Pescatorei with the pollen of O. triumphans, and proved absolutely identical with certain forms of the wild hybrid. The event was a most interesting one, and it is to be hoped that the parentage of other wild hybrids will be demonstrated in the same way. Messrs. Heath, of Cheltenham, have since obtained this hybrid artificially from the same two species.

O. × Harvengtense was awarded a Diploma of Honour by the Orchidéene, of Brussels, on February 11th last, as a supposed natural hybrid between O. crispum and O. sceptrum. It is, however, only a fine form of O. × excellens, as the column-wings and crest and other characters of the flower are altogether in agreement.

This hybrid is therefore very well known, and somewhat variable, though less so than some of those previously considered. Most of the forms approach O. Pescatorei in shape, though one or two have the longer segments of O. triumphans. The majority have light yellow sepals and petals with a white disc, though some have the yellow much reduced while others are entirely suffused with it. The amount of spotting also varies considerably. Generally speaking, the characters of both parents are very easily traced. It is one of the most beautiful of the group.

The following list shows the described forms of this hybrid, so far as I have been able to trace them :—

Odontoglossum × excellens, Rchb. f. in *Gard. Chron.*, 1881, ii. p. 426; 1885, ii. pp. 239, 241, fig. 51; *The Garden*, xxi. p. 216, t. 330; *Veitch Man. Orch.*, i. p. 74; Rolfe in *Gard. Chron.*, 1889, i. p. 650; 1891, i. p. 754; *Reichenbachia*, ser. 2, i. p. 41, t. 19.

O. × Brandtii, Kränzl. et Wittm. in *Gartenflora*, xxxviii. pp. 378, 537, t. 1308.

O. × stellimicans, Rchb. f. in *Gard. Chron.*, 1884, ii. p. 680.

Var. chrysomelanum, Rchb. f. in *Gard. Chron.*, 1888, i. p. 522.

Var. dellense, Rolfe in *Lindenia*, vii. p. 97, t. 335. Odontoglossum × dellense, O'Brien in *Gard. Chron.*, 1891, i. p. 521; Rolfe in *Journ. des Orch.*, ii. p. 70.

Var. eugenes, Rchb. f. in *Gard. Chron.*, 1889, i. p. 522 (in note); Odontoglossum × eugenes, *Veitch Man. Orch.*, i. p. 73; *Orchid Album*, viii. t. 355.

Var. Harvengtense, Rolfe in *Orchid Review*, ii. p. 112. O. Harvengtense, L. Lind. in *Journ. des Orch.*, v. p. 7.

Var. maculatum, Rchb. f. in *Gard. Chron.*, 1888, i. p. 522 (in note). Odontoglossum Vuylstekeanum maculatum, Rchb. f. *l.c.*, 1884, ii. p. 584.

R. A. R.

THE HYBRIDIST.

DENDROBIUM × LUTWYCHEANUM.

THIS is a very fine hybrid Dendrobium which has flowered in the collection of S. G. Lutwyche, Esq., of Eden Park, Beckenham, Kent. It was derived from D. Wardianum ♀ and D. × splendidissimum grandiflorum ♂, and the flower has the general shape of the former. It measures nearly three and a half inches in diameter across the petals, these organs being over an inch broad and the lip still broader. On first opening it was distinctly yellowish (doubtless owing to the influence of D. aureum in the hybrid parents), afterwards changing to nearly white, the petals having small rosy purple tips. The sepals are a little inrolled at the margins, and the dorsal sepal has a slight flush of pink near the base. The lip has a very large dark maroon blotch with slightly feathered margin, the remainder being palest primrose-white slightly flushed with pink at the tip. The plant approaches D. nobile in habit, and is five years old, but has only produced a single flower at present, but should develop into a very fine thing, as the flower is large, of good shape and great substance, as would naturally be expected from its distinguished parentage.

MASDEVALLIA × ASMODIA.

This is the pretty little hybrid for which Messrs. James Veitch and Sons, of Chelsea, received an Award of Merit from the Royal Horticultural Society on June 12th last. It was obtained from M. × Chelsoni crossed with the pollen of M. Reichenbachiana, and thus three species are involved in its parentage. In shape it most resembles the pollen parent, and is of about the same size, while the colour is a peculiar reddish purple, with slightly darker veins and some dull yellow in the throat. The sepaline tube is half an inch long, the lateral sepals an inch longer, while the curved slender tails measure two inches. The limb of the dorsal sepals arches over and is about a quarter as long as the lateral ones. The plant is now four years old, and the leaves range from three to six inches long. It is a very attractive little plant, the colour of the flower being of a very distinct and pleasing shade. It is apparently the first secondary hybrid in the genus.

DISA × LANGLEYENSIS.

This very charming hybrid was raised by Mr. Seden in the establishment of Messrs. James Veitch and Sons, and received an Award of Merit from the Royal Horticultural Society on May 8th, as already recorded at p. 186. It was obtained by crossing Disa racemosa with the pollen of D. tripetaloides and also from the reverse cross, the two being practically identical, both in shape and colour, as is shown by specimens kindly sent by Messrs.

Veitch. It is fairly intermediate in character, the flowers being of a beautiful rose-pink shade, and borne in racemes of ten to twelve, or more. The spur of the dorsal sepal is rather longer than in D. racemosa, but there is very little of the spotting so characteristic of D. tripetaloides, while the colour of the flowers also most resembles D. racemosa. It is very free growing and floriferous, and is likely to become a favourite garden plant. So free growing is it that more plants were raised than could be grown on, and some of them were thrown away in consequence.

Hybrid Disas at Kew.

It is astonishing how rapidly the beautiful hybrid Disas have come to the front. D. × Veitchii, the first of the group, flowered for the first time as recently as June, 1891, and last year a seedling in whose parentage it had participated flowered for the first time. A large number of seedlings are now blooming in the lobby of the Orchid house at Kew, which were derived from four different crosses made in 1891. Two of them flowered last year, and were recorded in our previous volume, D. × kewensis at p. 212, and D. × Premier at p. 339. The third and fourth crosses are identical with the two from which D. × langleyensis, mentioned in the preceding paragraph, was obtained, and the seedlings are practically identical, though many of the plants are rather lighter in colour and have the dorsal sepal more distinctly spotted. In fact, some open nearly white, but gradually change to pink. Of the other two crosses, D. × kewensis (D. grandiflora ♀ × D. tripetaloides ♂) and D. × Premier (D. tripetaloides ♀ × D. × Veitchii ♂), many plants are also flowering, and, as usual, exhibit a certain range of variation, more especially the latter, some of the plants having the lateral sepals half free, and others united almost to the tips. The two which flowered last year were evidently exceptional, as the great bulk of the plants are flowering at the present time.

Masdevallia × Henrietta.

A very pretty hybrid, which was raised by Mr. Robinson, gardener to the late Mr. F. L. Ames, of North Easton, Mass., U.S.A., between M. ignea erubescens ♀ and M. caudata Shuttleworthii ♂, was described some time ago under the above name (*Gard. Chron.*, 1893, i. p. 740). One raised by Captain Hincks, of Terrace House, Richmond, Yorkshire, must evidently bear the same name, the parentage being practically identical, the difference, such as it is, being that M. ignea Eichardii was one of the parents. It is a pretty little plant, fairly intermediate in character, as is apparent from a flower and photograph received. The tube of the flower is nearly as broad as long, thus approaching M. caudata, while the dorsal sepal is somewhat similar in shape, and the tail about one and a quarter inches long. The lateral sepals are nearly an inch long, slightly falcate, and the tails rather

shorter. The colour is almost salmon-pink with the nerves and margin darker. The seed was sown in September, 1891, and the plant flowered in May of the present year, when two years and eight months old. It is a very promising little plant of a pretty and attractive shade of colour.

ORCHIDS AT TWICKENHAM.

In the collection of H. Little, Esq., Baronshalt, The Barons, East Twickenham, we observed several noteworthy Orchids in flower during a recent visit. A plant of Cypripedium Sanderianum was bearing two spikes of two and three flowers respectively, the petals measuring eighteen inches long. This is one of the best plants we have seen of this species, which is notoriously difficult to grow. A spike of Cypripedium Rothschildianum bore two flowers, the diameter across the petals being eleven and a half inches. It is interesting to note that one of them has been crossed with Selenipedium caudatum. One of the many plants of Lælia purpurata bore a spike with no less than seven flowers, while Vanda teres, which here does especially well, carried spikes of six and seven flowers each, of great size. Selenipedium × albopurpureum is a great favourite here, and was bearing its lovely peach-coloured blossoms. Odontoglossum citrosmum, Lælio-cattleya × Schilleriana, Vanda tricolor and suavis, and various showy Cattleyas were also particularly noteworthy.

ORCHIDS AT HIGHBURY.

The collection of the Right Hon. J. Chamberlain, M.P., is always full of interest, and Mr. Burberry must be congratulated on his success in its management. One of the most interesting sights in the collection was a plant of Coryanthes speciosa, with a newly expanded flower. Although only two hours' old, the drops of liquid which were exuding from the glands at the base of the column had already covered the bottom of the remarkable bucket-shaped lip. It is certainly a very remarkable Orchid. Dendrobium Falconeri on a raft is a wonderful specimen, bearing over a hundred of its brilliant flowers. Miltonia vexillaria is exceptionally well grown here, many of the flowers being unusually large, and the plants quite clean. Mr. Burberry uses tobacco powder liberally, and states that no harm ensues to the plants. The charming Acacallis cyanea was also flowering well, also Lælia Boothiana, Dendrobium lineale, four beautiful pieces of D. Bensoniæ, the very rare D. Aphrodite, Restrepia elegans, the charming little Trichocentrum tigrinum, Miltonia Phalænopsis, Cattleya Aclandiæ, and large numbers of the usual showy species, which it would require far too much space to enumerate. Three very interesting hybrids not in flower are Cattleya × Chamberlainiana, C. × Brabantiæ, and C. × Mardelii. We have already given an account of the collection in our last volume.

DIES ORCHIDIANÆ.

NOTES on the Temple Show would now read something like matters of ancient history, but there is one matter on which I have a word or two to say, especially as last month I was completely crowded out. On one or two previous occasions I have alluded to the culture of Odontoglossum crispum in Belgium and England. It was therefore with the greater pleasure that I observed the group of twenty-five plants staged at the Temple by M. Vincke-Dujardin, of Bruges, which enabled a comparison to be made. What most struck me was the length of the racemes, and the number of flowers borne on each. One had no less than twenty flowers, two had sixteen, one fifteen, and two fourteen, which latter was the highest number observed in any English collection. But taking the flowers individually the difference was barely appreciable. The best flower I could find in the group measured four inches from tip to tip of the petals, which attained a maximum breadth of seventeen lines. Now O. crispum Rex exhibited by Baron Schröder was of precisely the same size, and the petals were only a line narrower, because less deeply toothed. And other flowers were seen of the same dimensions.

And this brings me back to the flower of Odontoglossum crispum, mentioned at page 99. I was thinking of Baron Schröder's splendid O. crispum apiatum when writing, and the dimensions were taken from a figure in the *Gardener's Chronicle.* Since then I have been informed that the figure in question is enlarged, and have been able to verify the statement by comparison with a flower. I mention the fact in explanation, and in order to put others on their guard, and I do not hesitate to say that no such explanation should have been necessary in such a case.

And now, to return to M. Vincke's exhibit, the question is how were those long spikes produced? This increased vigour is evidently due to increased food supply, and if no manure is used, as has been stated, an explanation might be sought in the water supply. Apart from the longer racemes I do not consider the plants healthier or better grown than those sent by Baron Schröder, for it must be borne in mind that choice, highly-coloured forms are generally less vigorous than more ordinary ones under the same treatment. I am told that M. Vincke had still finer examples at Antwerp, but am content to deal with what I saw. What is the cause of this increased vigour? A solution of the problem is invited.

Some of our records, I fear, are getting a little mixed. Picking up a contemporary the other day, I observed a list of new species, varieties, and hybrids, and among them Promenæa microptera as a new species, Masdevallia × glaphyrantha and M. × Parlatoreana as new hybrids, and Aërides

macolosum Schröderi as a new variety. Surely this is a little incursion into ancient history, for the first dates from 1881, the second from 1886, and the third from 1879, all being described by Reichenbach, while the fourth actually dates back to the time of Henfrey. Polystachya Lawrenceana and Odontoglossum crispum xanthotes have also been described months ago. All of which is very confusing, or amusing, according to which way you look at it. The moral is obvious. Another contemporary describes Bifrenaria tyrianthina as "the last Orchid described by Reichenbach." It is only necessary to add that the name appeared as early as 1854, and an excellent figure ten years later.

ARGUS.

M. BARBOSA RODRIGUES'S BRAZILIAN CATTLEYAS.

SEVERAL Brazilian Cattleyas were described by M. Barbosa Rodrigues in his *Genera et Species Orchidearum novarum*, published in 1877 and 1881. Through the kindness of Prof. Cogniaux, who is monographing the Brazilian Orchids for *Martius' Flora Brasiliensis*, I have been enabled to inspect the original coloured drawings, and now offer the following notes respecting them :—

Cattleya princeps (*Rodr. Gen. et Sp. Orch. nov.*, i. p. 68) is C. Walkeriana, Gardn.

C. trilabiata (*Rodr., l.c.*, p. 69) is C. Warneri, T. Moore, a light rosy form, with the lateral sepals somewhat enlarged, and showing an approach to the character of the lip in colour.

C. trichopiliochila (*Rodr., l.c.*, p. 70) is C. Eldorado, Linden, a form with pale rosy segments.

C. eximia (*Rodr., l.c.*, p. 70).—Of this, unfortunately, no drawing was found in the collection, but it is described as having much affinity with C. Walkeriana, though differing in having much longer, cylindrical pseudobulbs, which are monophyllous or diphyllous. Thus it appears to be identical with C. dolosa, Rchb. f.

C. elongata (*Rodr., l.c.*, p. 72) is C. Alexandræ, L. Lind. and Rolfe (*Gard. Chron.*, 1892, i. p. 522), and the former, as the older name, must be adopted. It was certainly overlooked when C. Alexandræ was described. The raceme bears four light rosy flowers, most like those of the variety elegans (*Lindenia*, viii. t. 358).

C. fragrans (*Rodr., l.c.*, p. 72) is a light-coloured form of C. velutina, Rchb. f.

C. alutacea (*Rodr., l.c.*, ii. p. 157) is C. velutina, Rchb. f.

C. purpurina (*Rodr., l.c.*, ii. p. 158).—Of this also no drawing was found,

but from the description it is evidently C. amethystoglossa, Lind. and Rchb. f., var. rosea. It is a native of Bahia.

In another work (*Plantas Novas cultivadas no Jardim Botanico do Rio de Janeiro*) M. Rodrigues has figured his Cattleya Aquinii (p. 23, t. 4, fig. C.), which absolutely confirms the statement made at page 310 of our last volume that this plant is only a trilabiate state of C. intermedia, in which the peculiarity has become fixed or permanent. R. A. ROLFE.

SCHOMBURGKIA TIBICINIS.

I post you to-day flowers of Schomburgkia tibicinis, which I have now bloomed for the second time. The flower-stalk is thirty-nine inches long; the length of the pseudobulb being thirteen and a half inches; the greatest circumference five and a half inches, and bearing four leaves from four to six inches in length. This plant has been grown during the winter, and up to the present time in full sunlight, and in a temperature of 60° to 62° Fahr. by night, and 65° to 70° by day, pipe heat, together with any additional rise of temperature caused by the heat of the sun. On one occasion the thermometer registered 110°. Water has been given when required, but no syringing has been allowed. The plant is grown in a pot filled with crocks, and the rhizomes of the Orchid sit on the crocks, with only a small quantity of fibrous peat to surface the pot and to wedge the plant tight in its position.

O. O. WRIGLEY.

Bridge Hall, Bury, Lancashire.

DENDROBIUM VERATRIFOLIUM.

This is a graceful and pretty species, which was exhibited at a meeting of the Royal Horticultural Society, on June 12th last, by Mr. W. H. Young, Orchid grower to F. Wigan, Esq., Clare Lawn, East Sheen. Plants were distributed by Messrs. F. Sander and Co., St. Albans, several months ago. It has, however, been known to science for upwards of half a century, having been described by Lindley in 1843 (*Hook. Lond. Journ. of Bot.*, ii. p. 236), from dried specimens collected by the late Surgeon-Major Hinds, in New Guinea. D. lineale, Rolfe (*Gard. Chron.*, 1889, ii. p. 381), is evidently the same species, though its identity has previously been overlooked. Thus the species was introduced to cultivation five years ago by Messrs. James Veitch and Sons, of Chelsea, who received an Award of Merit for it on June 10, 1890. The sepals and petals are white, and the lip beautifully veined with light purple. There is a very closely allied plant in the Solomon Islands, not yet in cultivation, which has rather larger petals, but may prove to be a variety of the same.

PHAIUS BICOLOR VAR. OWENIÆ.

On April 24th last, Messrs. F. Sander and Co., St. Albans, received an Award of Merit for a very pretty dark coloured Phaius, under the name of P. Oweniæ, which was obviously allied to P. bicolor, Lindl., a native of Ceylon. They must have received it some considerable time ago, having used it as the seed parent of P. × Owenianus, a handsome hybrid which received a First-class Certificate at the recent Temple Show, P. Humblotii being the other parent. Singularly enough a plant has flowered in the collection of Mr. W. C. Parkes, Llanberis, Robinson Road, Lower Tooting, which is known to have come with certain other bulbs from Ceylon, a circumstance which suggests that island as the habitat of the plant. The sepals and petals are about two inches long and of a deep warm brown, somewhat approaching mahogany in shade. The tube and throat of the lip are very deep yellow, the front lobe and apex of the side-lobes rich maroon-purple, and the curved spur, which measures three-quarters of an inch long, deep yellow. Many of the plants are rather dwarfer than ordinary P. bicolor, Lindl., and the flowers, especially the lip, deeper in colour, yet I believe it is only a local variety of it with richly coloured flowers. Some forms are nearly as light as in plate 23 of Lindley's *Sertum Orchidacearum*, while others are darker, and to these perhaps the varietal name will best apply. Its dwarfer habit and richly coloured flowers render it a very desirable addition to the group.

STANHOPEA CALCEOLUS.

Several of the species discovered by Warscewicz seem to have been lost sight of, and the present one among the number. It was described by Reichenbach over thirty years ago, as a native of Central America, since which time nothing further seems to have been recorded about it. It is interesting to note that it has now reappeared in the establishment of Messrs. Hugh Low and Co., of Clapton—at least their plant agrees with the original description, beyond which, alas! there is nothing to aid one in its identification. It forms one of the three known species of the section Stanhopeastrum, which is characterised by having the lip entire and simply saccate, the other two being S. ecornuta, Lindl., and S. pulla, Rchb. f. The present species enjoys with S. pulla the distinction of having the smallest flowers in the genus, being scarcely two and a quarter inches across their broadest diameter. They are deep buff yellow, except the front part of the lip, which is paler. The sepals are concave, and the petals sharply reflexed about the middle. The lip is pandurate, and much like a boot rather flattened at the toe, the hind part being saccate. The column is eight lines long, and nearly straight. The newly-opened flowers are very fragrant, with an odour something like water-melon. R. A. R.

A GROUP OF PHALÆNOPSIS.

OUR present illustration represents a very interesting little group of Phalænopsis, two of the figures representing well-known Philippine species, the others forms of the natural hybrid which is occasionally found where the two former grow together.

P. Aphrodite (Fig. 20) is the one so frequently cultivated under the erroneous name of P. amabilis, owing to Lindley's unfortunate mistake of first identifying it with the Malayan plant of that name and then re-describing the latter as P. grandiflora, though now that the mistake has been corrected in the books there seems a possibility of the right names being adopted. It

Fig. 20. PHALÆNOPSIS APHRODITE. Fig. 21. P. SCHILLERIANA.

Fig. 22. P. × LEUCORRHODA. Fig. 23. P. × L. × VAR. CYNTHIA.

was introduced by Cuming as long ago as 1837, and, as is well known, has green leaves and white flowers, with thread-like tendrils in front of the lip (unfortunately the tendrils are not shown in the photograph, the apex of the lip in this species being usually inflexed, and thus lost in the white ground).

P. Schilleriana (Fig. 21) did not appear until 1858, when it was introduced by the late Consul Schiller, of Hamburg. It has leaves beautifully marbled with grey and dull green, and rose-coloured flowers with anchor-

shaped tendrils. It inhabits much the same area as the preceding, and is sometimes found associated with it.

P. × leucorrhoda (Fig. 22) originally appeared in 1875, in an importation made by Messrs. Hugh Low and Co., of Clapton, and was described by Reichenbach as a natural hybrid between P. Aphrodite and P. Schilleriana, on account of the way it combined the characters of these two distinct plants. The original form had mottled leaves and flat roots, and passed for P. Schilleriana until it flowered. Afterwards, other plants appeared with green leaves (or nearly green) and more rounded roots, though the flowers showed the same intermediate character. One of these was described as P. × casta. It will be observed that the lip has slender tendrils, as in P. Aphrodite; yet the basal angles of the front-lobe are rounded, and the shape of the side-lobes also more like P. Schilleriana, while the petals are flushed with pink, especially near the base.

P. × leucorrhoda var. Cynthia (Fig. 23) appeared in 1889, in the collection of F. Wigan, Esq., Clare Lawn, East Sheen, and was not distinguished from P. Schilleriana until it flowered. Then, however, its hybrid origin was apparent, for the characters of P. Aphrodite could be clearly traced, especially in the side-lobes of the lip and crest. The sepals and petals were strongly flushed with rose, shading off to nearly white near the margins. The tendrils, however, were very similar to those of P. Schilleriana. Immediately afterwards a form appeared with Messrs. Hugh Low and Co., with the same anchor-shaped tendrils and the usual hybrid characters, but with white flowers. Last spring another form appeared in the same establishment with the same characteristic shape, but with rosy flowers very similar to Mr. Wigan's plant, and it is this which is represented in the photograph. It approaches P. Schilleriana more nearly than the other forms, yet the hybrid characters are obvious enough, and in the living flower strongly marked.

The photograph was taken by Mr. G. I'Anson, of Upper Clapton, P. × leucorrhoda from a flower kindly sent by Mr. W. Bull, of Chelsea, and the others from the establishment of Messrs. Hugh Low and Co. It illustrates in a graphic manner the way in which the characters of the parent species are combined in the offspring. If a series of the hybrids be examined some will be seen to approach one parent very nearly in certain characters, while others lean as strongly towards the other, though in every case the combination of characters can be traced, and the transition through intermediate forms is gradual. The group is very interesting and beautiful.

ODONTOGLOSSUM CRISPUM VAR. BARONESS SCHRÖDER.

This is a very dark and richly-coloured variety, for which Baron Schröder, The Dell, Egham, received a First-class Certificate at the Royal

Horticultural Society's meeting on June 12th. The sepals and petals are almost wholly suffused with rich claret-purple, with the exception of a small nearly white area at the base of each, a similar narrow margin, and a few pale narrow markings where the large blotches are not quite confluent. The markings on the lip are reddish brown. The flowers measure two and three-quarter inches across the broad petals, but will probably become larger as the plant increases in strength. It is an exceptionally richly-coloured variety, and represents the extreme limit of variation in this particular direction yet known.

ODONTOGLOSSUM CRISPUM VAR. GRANDE-MACULATUM.

This was also exhibited at the same time as the preceding, and received a similar award. It is a large and beautiful light-coloured spotted form. All the segments are very broad, the dorsal sepal being an inch across, and the deeply-fringed petals still broader, and with very rounded apex. The colour is delicate blush, a little darker on the sepals, each of which bears a very few (usually three) cinnamon-brown blotches near the base. The petals bear about thirty similar blotches, a few being partially confluent, and the basal third unspotted. There are a few small spots on the lip. A flower of each of these beautiful varieties has been kindly sent by the Baron.

NURSERY NOTES.

Messrs. James Veitch and Sons, Chelsea.

One of the features of interest at the present time at the Royal Exotic Nursery is a series of the new and elegant Disa × langleyensis, which being arranged in groups are seen to the best advantage, the long racemes of rosy pink flowers giving a charming effect. It is quite a greenhouse Orchid of the easiest culture. Another promising plant is the new Dendrobium glomeratum, which proves to be very floriferous, though only in cultivation about six months. Several plants are bearing racemes of its bright rosy purple flowers with orange-red lip, producing a very pretty effect. The plant also appears to be a good grower. There are also a number of very interesting hybrids for which the Nursery has so long been famous, and among them the rich orange Lælio-cattleya × Hippolyta, the very interesting Epidendrum × Endresio-Wallisii, and a number of hybrid Cypripediums, which keep up a succession throughout the year. Cattleyas and Odontoglossums make a good show, among the former being a good early C. Gaskelliana, C. Warscewiczii, C. Aclandiæ, &c. One very dark form of Lælia

tenebrosa bore seven fine flowers on two spikes. We also note with interest a small batch of what is evidently Cypripedium Charlesworthii, received in September, 1891. They were small plants, in poor condition, when received, which probably accounts for their not having yet flowered, but as the leaves have the shape and very characteristic markings of this species, there should be no doubt of what they are. The strange thing is that a few plants should have been introduced so long ago without anything being known of its remarkable character. Other plants worthy of note are some fine Oncidium ampliatum majus, Angræcum falcatum with eight racemes, quite a mass of flower, the very rare Dendrobium eburneum, D. Dearei, D. Parishii, and a very pretty form of D. suavissimum, Spathoglottis Vieillardii, Platyclinis latifolia, the curious little Epidendrum ohraceum, and a variety of the showier Orchids usually met with at this season.

Messrs. Charlesworth, Shuttleworth, and Co.

The compact and well-arranged Nursery of Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, of about half an acre in extent, is devoted almost entirely to Orchids, and contains many features of interest. The houses are built of iron, with a well-arranged system of heating and ventilation, and entirely fitted with lath roller blinds, which latter, we believe, are likely to play an important part in the Orchid culture of the future. Although more expensive at the outset than canvas blinds, they are far more durable, better for the plants during summer, and of great service in conserving heat during cold and windy nights in winter. We believe that a well-known firm are about to commence their manufacture on a large scale.

Most of the usual commercial Orchids are grown in quantity, and we observed large batches of such things as Cattleya labiata and its allies, Lælia purpurata, cinnabarina, and tenebrosa, Cymbidium Lowianum, Odontoglossum crispum, Pescatorei, polyxanthum, Harryanum, cirrhosum and ramosissimum, Miltonia vexillaria and Roezlii, Cypripedium Charlesworthii and bellatulum, Oncidium macranthum and cornigerum, Vanda Kimballiana, cœrulea, and Amesiana, and many others. Many of the summer-blooming kinds were flowering in profusion, including several of those just mentioned; one fine clump of Lælia purpurata bearing eleven spikes of five and four flowers each, while a spike of six flowers appeared on another plant. Of Sophronitis grandiflora we noticed a large batch of both the short- and long-bulbed variety, and curiously enough, the same peculiarity applies to their capsules—the short-bulbed form having a short capsule, and *vice-versâ*. Many plants of the rare Epidendrum Frederici Gulielmi were in flower, also the brightly-coloured Oncidium concolor, Thunia Marshalliana, Maxillaria Sanderiana, Miltonia spectabilis, M. Roezlii, and the very pretty M. Warscewiczii. Among rarer things we

noted a fine plant of Grammatophyllum Rumphianum with two spikes of twenty-nine and thirty flowers, Stanhopea graveolens, Gongora bufonia, and many others, of which a mere catalogue would be tedious. Lælia Digbyana, however, in bud, must not be omitted, as this species is now in demand for hybridisation purposes, and will probably be heard much of in the future.

Cypripedium Charlesworthii is a plant to which one instinctively turns here, and accordingly we note a large number of plants, some of them well established and likely to flower well this autumn. And here we observed a very remarkable circumstance respecting it. A small clump showed C. Charlesworthii and C. bellatulum growing in the same clump, with roots interlocked, precisely as collected, and this only makes the mystery of the plant more profound, for it appears that its habitat—now no longer a secret—is in the neighbourhood of Arracan, where also has been discovered a new locality for C. bellatulum. And if further corroboration were necessary it might be found in the leaf structure, for a section shows a surprising similarity between them, which in the case of such distinct plants shows an adaptation to living under similar conditions. And what about the chances of a natural hybrid between them being discovered? More unlikely things have happened, and at all events we are likely to have the artificial one, for we learn that the cross and the reverse cross have both been made. Some surprises may be in store.

And this leads us to speak of the hybrids. Mr. Charlesworth has taken up hybridising extensively, and has a very large number of seedlings in various stages of infancy, including such fine crosses as Lælia purpurata × Cattleya Dowiana aurea, L. cinnabarina × C. amethystoglossa, C. Mendelii × C. Aclandiæ, L. cinnabarina × C. Aclandiæ, C. Schilleriana × C. Dowiana aurea, Cypripedium concolor × C. Curtisii, &c. Many crosses with Sophronitis grandiflora and Cattleya labiata have also been made, and some of the seedlings are up, including S. grandiflora × C. Leopoldii. Among the pods not yet ripe we noted S. grandiflora × C. Dowiana aurea, C. labiata × Sophronitis cernua, C. superba × L. crispa, C. superba × C. × Hardyana, L. harpophylla × S. grandiflora, while good seeds have been sown of L. tenebrosa × C. Dowiana aurea. A large number of Cypripediums from good crosses are also progressing towards maturity. The list might easily be prolonged, but enough has been said to show the nature of the work in progress in this interesting establishment.

Mr. Bull's Annual Exhibition.

Mr. W. Bull's Orchid Exhibition during the months of May to July is quite an annual Institution at Chelsea, having been held for upwards of a dozen years in succession. The present season it is fully up to the average, and the large Show House presents a charming sight, the plants being tastefully arranged with maidenhair ferns, &c., so as to show the flowers off to the

best advantage. The usual popular Orchids, such as Cattleyas, Lælias, Odontoglossums, Miltonia vexillaria, Cymbidium Lowianum, and others, are represented in quantity, many of them by a series of good varieties, together with a number of less common, but equally interesting things. An enumeration would occupy far more space than we can spare, though we may mention a few of the rarer or more striking ones. Among Odontoglossums we observed the rare O. Williamsii, a handsome thing allied to O. grande, and valuable on account of flowering in June; O. hastilabium, and the brightly-coloured O. cordatum Kienastianum. Several plants of Cochlioda Nœtzliana with its pleasing orange-scarlet flowers were, as usual, very attractive, while of Oncidiums were several plants of O. Gardnerianum, the very curious O. unicorne, the neat little O. Harrisonianum, O. macranthum aureum with sepals as yellow as the petals, and the ever graceful O. phymatochilum, like a cloud of insects on the wing. Mr. Bull utilises various graceful species, not particularly noticeable as regards colour, with the happiest effect, and among them Brassia verrucosa and the rare B. Keiliana. Lælia tenebrosa was conspicuous for its rich colour, and among Cattleyas we noticed one very striking one called signata, whose exact affinity is a little doubtful, unless it be a remarkable coloured form of C. Mendelii, which should be more carefully compared. Nanodes Medusæ bore two of its richly coloured flowers with fringed lip, and a small plant of Promenæa xanthina was wreathed with flowers. Acanthephippium bicolor is not often met with, and was noticeable on account of its peculiar purple colour, as was Lycaste Skinneri alba so much out of season. Round a small fountain some interesting little plants are always arranged, and here we saw the Trichopilia tortilis and a variety of Masdevallias, as macrura, Wageneriana, infracta, Reichenbachiana, Chimæra, bella and radiata.

Mr. Bull has quite a collection of these interesting plants, for in another house were M. demissa, peristeria, anchorifera, ionocharis, and others, including the remarkable M. muscosa with mossy peduncles and a lip which suddenly closes on the slightest touch. Palumbina candida and Ornithocephalus grandiflorus are two interesting little Orchids, of which several plants were in flower. It is rather curious to note how the smaller Aërides and Saccolabiums have been superseded by the cool American Orchids, though we noted the pretty Aërides crispum, japonicum, and Houlletianum, Saccolabium ampullaceum and curvifolium, and the strongly aromatic Vanda Parishii in flower. A glance round the other houses shows the source from which the supplies for the Show House are drawn, where interesting things are coming into flower. A second house is devoted to Odontoglossums in flower, the effect being very graceful. Mr. Bull's Annual Exhibition shows what can be done with these charming plants, and has no doubt contributed its share to the popularisation of Orchid culture, which has undergone such a marked development during recent years.

CALENDAR OF OPERATIONS FOR JULY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperatures and general treatment in all departments should be continued as advised for last month.

But little repotting will now remain to be done, and this month should see most of it completed, with the exception perhaps of an isolated plant or two, such as the latest of the Cattleya gigas, Lælia crispa, and similar late-flowering kinds. Cattleya Mendelii and C. Mossiæ will now have passed out of bloom, and if not already repotted, should be taken in hand at once, and done carefully in the same way and in a similar compost to that recommended for other Cattleyas, and given every encouragement to produce strong healthy growth.

The few remaining plants in the Intermediate house should likewise now be finished. This house usually contains such a varied collection of genera and species that it is necessary to examine them at intervals, in order that no plant may escape being repotted at the proper season, which is, as previously stated, as they commence to grow. Among the last batch to be repotted here (which is now just done) were found a few Oncidiums, including O. sarcodes, which is a kind given to deterioration. The best method that I have found to grow it at present is to repot it every year, filling the pots three-parts with drainage, and employing nothing but sphagnum moss, placed in very lightly, which is watered copiously during the growing season. Among the Odontoglossums was, notably, the beautiful O. citrosmum, an Orchid which it is not advisable to repot too frequently, and if done well should last for two or three years. It is best grown in two parts of peat to one of sphagnum, and potted firmly, keeping it moist and, using a little extra shading for a few weeks afterwards, to prevent excessive shrivelling, which is otherwise apt to take place. Baskets are preferable to pots, though the plants grow equally well in the latter; but suspenders are necessary from the time the young flower-spikes appear, as these naturally take a downward course, and look so much more graceful than when staked in an upright position. A few of the Lycastes, including the latest to start of L. Skinneri and L. plana, were also repotted at this date, as likewise Bifrenaria Harrisoniæ, Trichosma suavis, Houlletia Brocklehurstiana, Acropera Loddigesii, and Nanodes Medusa, all of which require the usual compost of peat and sphagnum moss.

Sobralias may be repotted during this month, or as soon as the flowering season is past. They are quick, strong-growing plants, and when well established give but little trouble. They make a large quantity of thick, fleshy roots, and must have pots of a reasonable size, which should be only one-fourth filled with drainage. They should be potted in good yellow loam with a little coarse sand, and the old ball of roots need not be broken,

though the old crocks and any loose material should be removed. Sobralias delight in a cool intermediate temperature, and in a moderate supply of water throughout the year, as they have no special resting period.

Miltonia vexillaria must now also be repotted where it is needful. Success with this lovely Orchid mainly depends upon giving the plants new and sweet material (peat and sphagnum) at least once in every two years, keeping them clean (the method by which this is done has already been stated), giving them intermediate temperature, and last, though not least, of the careful use of the watering-can during winter.

Odontoglossum Schlieperianum and O. Williamsii are summer-blooming species, and are now pushing up flower spikes. They are very telling when strong; but if the spikes are small are of but little value, and such are best pinched off on their appearance, so that the plants have a chance of becoming strong. Intermediate treatment is the right one, and if not repotted early in spring, it should be done immediately after blooming.

Inmates of the East Indian house are now making growth, and must not lack moisture. The deciduous Calanthes are now fairly rooted, and may receive manure. I find one of the best ways of applying this is to procure some cow dung, and place a little here and there on the surface of the compost, under which the roots delight to get. Plants of Phalænopsis should now make the strongest growth of the season. Decaying vegetable matter, such as leaves, is good for them, if placed underneath the stages and kept moist. P. grandiflora is sometimes apt to be continually pushing up flower spikes, which if allowed to grow weakens the plant. It is best, therefore, not to allow weakly specimens to bloom, but pinch off the spikes in order to strengthen the foliage. Saccolabiums like the same treatment as the last named, and now is the season for many of them to produce flower spikes; but should the plants be weakly, the above remark applies.

Aganisias succeed best in this house near the glass, in a very light position. They grow best in pans or baskets, in a compost of peat and sphagnum. Some of them would appear, by their long creeping rhizomes, to be better adapted for blocks; but this method of Orchid culture is not good, and usually ends in failure, as one can never keep the roots in anything like an evenly balanced condition as when they are beneath the sphagnum moss, which for such species as A. cœrulea should be placed in very lightly. Dendrobium aggregatum, however, is best grown on a block. I usually get a portion of a tree-fern stem, or a piece of apple or pear wood, to fix the plant on, suspending it flatwise near the glass.

The Calanthes of the Veratrifolia section (evergreen) are now blooming, and succeed best in the Intermediate house. As soon as the flower-spikes are cut, the plants may be repotted, using good fibrous loam, leaf soil, and silver sand, and draining the pot about one quarter its depth. The same method for applying manure is good for these as for the deciduous kinds.

They like a liberal supply of water during summer, and during winter must not be allowed to become too dry.

Referring again to Cattleya gigas and C. Warneri, a few more words may now be said, as this and the following month is the right time to repot, and the treatment in other ways is likewise very important during these two months. In the first place, let each plant be repotted, if desirable, when the new pseudobulb is completed and the new roots are just pushing. Similar compost and mode of potting as for other Cattleya is the best. I say "potting," though perhaps I should really say "basketting"; for no doubt these two species flower much more freely when grown in baskets and suspended. After repotting, place the plants in a cool, well-ventilated house; but be careful to shade the plants for a week or two afterwards, until the roots are seen to take hold of the new compost, in order to avoid any possible check or undue loss of foliage. They soon recover from the effects of root disturbance at this season. If treated cool—that is to say, if an abundance of air is given—a second growth may generally be averted, though even then some few are almost sure to start again, which, however, need not cause any anxiety. If it occurs, continue to treat the plant exactly as though it remained dormant, simply ignoring the existence of a young break. Sooner or later this immature growth will form a little pseudobulb, leaving the plant free, at its proper time next season, to push forth other strong flowering-sized growths from other eyes. Trust to air, both night and day, to assist in preventing this second growth, but do not rely upon the withholding of water at the roots. Of course, less water should be given; but it is the same with Cattleyas as with Dendrobiums—water must not be withheld too suddenly when growth is finished, or the plants will quickly shrivel and receive a severe check, which may cause the very thing it is sought to prevent—*i.e.*, the pushing of immature growth. It is in the dull days of winter when some Orchids may be kept absolutely dry with advantage, and not until then. If at this season any Orchid should appear to have finished its growth, it must still have water in reasonable quantity, the amount being reduced very gradually.

Speaking of air, I am tempted to say a few more words. There can be no doubt whatever that, if properly used, air is the most valuable agent at the Orchid grower's command; and I mention this fact once more lest it should be overlooked by new beginners. One may sometimes observe some species of Orchid, perhaps hailing from the East Indies, doing very well in hot, close structures, where but little attention is given to the subject of ventilation. But no good grower of Orchids will ever deny that for the cool and intermediate kinds, successful culture is due to a very large extent upon the systematic admittance of pure air. This is no new doctrine. I remember, in my earliest career of Orchid growing, hearing that well-known and successful Orchid enthusiast, the late Mr. Dominy, relate how well his

Cattleyas grew at Exeter in a house so glazed as to enable him to pass the handle of a budding-knife between the lap of each pane of glass. I believe many amateurs at that time took the hint, and constructed their roofs on a like scale, but found it rather inconvenient in snowy weather, and the system generally proved too much for the plants during cold wintry weather, especially when the houses were in exposed situations, which I can fully understand would be the case. No doubt the climate at Exeter is comparatively warm to some parts of England, and perhaps the house in question was somewhat sheltered. However that might be, and although it may not be a good system to adopt universally, yet it clearly sets forth that which is needful, and the ways and means of procuring the same must necessarily be left very much to the judgment of the cultivator. Further remarks upon the subject will be found in the Calendar for January last, under the heading of "*Air*." There I remarked that cold direct draughts should be avoided, which I now qualify by saying that for cool-growing Orchids it applies only during severe weather in winter. For these species, cool direct draughts during summer are probably more beneficial than otherwise.

Pot up any of the Cypripediums that have finished blooming; these delight in new material (*see* February Calendar), and quickly recover from the effects of being shifted. Pleionès should be manured, and be given plenty of water. Cow dung is a good thing for there, and also for Thunias; but should this system prove objectionable, it may be applied in the form of liquid manure. When the Thunias have done flowering, they should be given plenty of air and water for the next two months. Some of the earliest of the Dendrobiums will soon be finishing off. When the last leaf of D. Wardianum makes its appearance, the plants should be taken to a cooler house, as this species is very quick to start a second time, which should be avoided if possible. D. chrysanthum may be taken to the Cattleya house, and kept moderately dry only. This species will soon push forth its flowering buds, and open during the autumn months, usually before it is denuded of foliage.

A correspondent wants advice on his Odontoglossum Alexandræ: "the leaves turn yellow and die, and they are going from bad to worse." The bedding-out system is wrong. Plants that grow on the branches of trees ought not to be planted in beds on the ground, nor on stages, unless it is for a few weeks after being imported to resuscitate. Grow them in pots, and stand the pots on open wood-work stages, so that the air can pass up between them. Give an abundance of air both night and day, and water during the summer as soon as the moss commences to look white, but during winter much less frequently. Do not dip the plants in insecticides to destroy thrips, as the plants are also destroyed—use tobacco powder. It is the chemical insecticides to which I refer; a liquid extracted from the

pure tobacco-leaf is much less hurtful. Pot each plant just as it is beginning to make new growth, no matter at what time of the year. Shade from sunshine, but not during the evening and dull weather. Damp down in summer three times a day; in winter, use discretion in accordance with the weather. Should this treatment be different from what they have had, a few more leaves may probably turn yellow at first, showing the weak constitution of the plants; but persevere in the above treatment, and success is sure to follow ultimately.

"Can Orchids be grown in a Wardian case?" is a question which comes from across the "Atlantic." I am not prepared to answer with a great amount of authority; yet I see no reason why some species of Orchids should not give a reasonable amount of satisfaction if grown in a large ventilated case in a light window in a well-ventilated room—that is, supposing no gas is used, and their natural requirements be kept in view. I would advise for a trial, as being the most likely to grow, the Mexican and Brazilian Cattleyas and Lælias, with perhaps a plant each of Cypripedium insigne and Cœlogyne cristata.

ORCHID PORTRAITS.

CATTLEYA ELDORADO, VARS. OWENII and LINDENI.—*Lindenia*, t. 409.

CATTLEYA GIGAS.—*Garden*, May 26th, p. 445, with fig.—C. Warscewiczii, Rchb. f., which is mentioned as a synonym, is a far older name.

CŒLOGYNE DAYANA. The fine specimen shown by Baron Schröder at the Temple Show.—*Gard. Chron.*, June 2nd, pp. 694, 695, fig. 87.

CYPRIPEDIUM CALLOSUM SANDERÆ.—*Gard. Mag.*, May 26th, p. 303, with fig.; *Journ. of Hort.*, May 31st, pp. 422, 423, fig. 68.

CYPRIPEDIUM × DALLEMAGNEI. The plant which has hitherto been know as C. × Spicero-Lowianum.—*Lindenia*, t. 411.

CYPRIPEDIUM × GRANDE ATRATUM. A fine specimen in the collection of W. S. Kimball, Esq., Rochester, U.S.A.—*Gard. Chron.*, June 2nd, p. 692, supplementary plate.

CYPRIPEDIUM INSIGNE MONTANUM.—*Lindenia*, t. 414.

DENDROBIUM × DELLENSE.—*Gard. Mag.*, June 9th, pp. 328, 329, with fig.

DENDROBIUM NOBILE. A fine specimen six and a quarter feet through and crowded with flowers, grown by Mr. Prinsep, gardener to Lord Portman, Buxtead Park.—*Gard. World*, June 2nd, pp. 628, 629, with fig.

DENDROBIUM NOBILE SCHRŒDERIANUM.—*Gard. Mag.*, May 26th, p. 294, with fig.

DENDROBIUM SPECIOSUM HILLII.—*Gard. World*, June 9th, p. 645, with fig.

LÆLIA × JUVENILIS.—*Lindenia*, t. 415.

LÆLIO-CATTLEYA × ELEGANS VAR. LEUCOTATA. This is a form of L.-c. × Schilleriana.—*Lindenia*, t. 413.

LÆLIO-CATTLEYA × FREDERICK BOYLE.—*Gard. Mag.*, pp. 312, 316, with fig.

LYCASTE COSTATA.—*Journ. of Hort.*, June 14th, p. 467, fig. 76.—This is Lycaste mesochlœna, Rchb. f. See *Orchid Review*, i. p. 72.

LYCASTE × IMSCHOOTIANA.—*Lindenia*, t. 410.

LYCASTE LUCIANI, L. Lind. and Cogn.—*Lindenia*, t. 412.

MAXILLARIA VENUSTA.—*Orchid Album*, t. 492.

MILTONIA SPECTABILIS.—*Orchid Album*, t. 491.

MILTONIA VEXILLARIA.—*Garden*, June 23rd, p. 536, with fig.

ODONTOGLOSSUM CORDATUM AUREUM.—*Orchid Album*, t. 489.

ODONTOGLOSSUM CRISPUM, BARONESS SCHRÖDER.—*Journ. of Hort.*, June 21st, pp. 490, 491, fig. 80.

ODONTOGLOSSUM CRISPUM NOBILIUS.—*Journ. of Hort.*, May 31st, pp. 423, 430, fig. 64.

ODONTOGLOSSUM CRISPUM REX.—*Gard. Mag.*, pp. 312, 316, with fig.

ODONTOGLOSSUM CRISPUM SANDERÆ.—*Journ. of Hort.*, May 24th, pp. 401, 408, fig. 65.

ODONTOGLOSSUM CRISPUM VAR. WALTONENSE.—*Lindenia*, t. 416.

ODONTOGLOSSUM VUYLSTEKEANUM.—*Gard. Mag.*, June 23rd, p. 357, with fig.

ONCIDIUM AMPHIATUM MAJUS.—*Garden*, June 9th, p. 491, with fig.

PALUMBINA CANDIDA.—*Orchid Album*, t. 490.

PHAIUS × OWENIANUS.—*Journ. of Hort.*, June 7th, p. 445, fig. 72; *Gard. Chron.*, June 23rd, pp. 783, 787, fig. 102.

SELENIPEDIUM SARGENTIANUM, Rolfe.—The interesting Brazilian species described at p. 239 of our last volume.—*Gard. Chron.*, June 23rd, p. 781, fig. 100.

STANHOPEA MARTIANA.—*Garden*, June 2nd, p. 470, with fig.

CONTINENTAL NOTES.

BY CH. DE BOSSCHERE.

AT the International Horticultural Exhibition at Lille many beautiful Orchids were sent, by MM. Boutemy and M. Ad. Van den Heede, from France, and MM. Peeters and Vervaet, from Belgium. Among the numerous species and varieties sent by M. Peeters must be mentioned—the beautiful varieties of Odontoglossum crispum guttatum, an unusually dark Lælia tenebrosa, a beautiful Cattleya Mossia Reineckiana with richly-coloured lip, a Cattleya Warneri remarkable for the breadth of the petals and rich colour of the lip, Oncidium macranthum with seventy-five flowers,

a charming O. superbiens, Miltonia vexillaria gigantea, remarkable for the size of its flowers, Masdevallia Veitchii grandiflora, a dark Cattleya Skinneri, and Lælio-cattleya × Schilleriana with lilac-coloured segments and a splendid lip.

At the meeting of the Société royale d'Agriculture et de Botanic, and the Chambre syndicale des horticultures, of Ghent, Certificates of Merit were accorded to the very interesting Chondrorhyncha Chestertoni exhibited by M. A. Van Imschoot; Cattleya Mossiæ maxima and C. M. purpurata from M. de Langhe-Vervaene; and to Odontoglossum Vuylstekeanum, Cypripedium Lawrenceanum Hyeanum, and Cochlioda Nœtzliana, from M. Jules Hye. M. Pynaert sent a beautiful hybrid from C. Curtisii × Lawrenceanum [a form of C. × Gowerianum.—Ed.], and M. Coryn a very good Cattleya Mendelii.

At the meeting of the Orchidéene, of Brussels, many fine Orchids were shown. The following each received a First-class Diploma of Honour:—Lælio-cattleya × Valvassorii (C. Warneri × L. purpura), Lælia purpurata fastuosa, the bright purple Bifrenaria tyrianthina, and Aërides Regnieri, from Cochin China, all exhibited by Messrs. Linden. Also Anguloa × Madouxiana from M. Madoux, and the dark-coloured Cypripedium caudatum Lombaerdianum from M. de Lombaerde. Among those to which Certificates of Merit were awarded may be noted—Cattleya Mossiæ from M. Van Wambeke, the very dark Odontoglossum crispum purpureum from M. Kegeljan, and a fine Cypripedium Rothschildianum from M. Madoux. M. Van Wambeke exhibited a group of good varieties of Odontoglossum, well cultivated. Good forms of Cattleya Mendelii and Odontoglossum crispum were exhibited by M. Van Wambeke, also Cattleya gigas, Lælia purpurata, and a very beautiful L. tenebrosa, by M. le Comte de Bousies.

In the houses of the Horticulture Internationale are masses of Cattleya Mendelii, Mossiæ, and Aclandiæ, many of the brilliant-flowered Masdevallias and Cochlioda Nœtzliana, numerous Cypripediums, a fine lot of Miltonia vexillaria and Lælia purpurata; also Dendrobium Dalhousieanum, Vanda teres, V. suavis, &c.

At the establishment of M. A. A. Peeters the Cattleyas and Odontoglossums are flowering by hundreds, but especially noteworthy are—a plant of the superb Lælio-cattleya × Arnoldiana, which gained the Gold Medal of the Royal Horticultural Society some time ago, the richly-coloured Cattleya Mossiæ Peetersii, C. M. vestalis with five charming flowers, the beautiful Miltonia × Bleuana nobilior, and many plants of Lælia tenebrosa.

In the establishment of M. Ch. Vuylsteke, of Loochristy, are many fine things, including a very fine Cattleya Mendelii, the beautiful Odontoglossum Vuylstekeanum, O. triumphans with large and delicately tinted flowers, and a fine Odontoglossum crispum with flowers four inches in diameter.

LÆLIO-CATTLEYA × ELEGANS VAR. TURNERI.

This is one of the oldest varieties, and still unsurpassed for richness of colour, as a flower from the collection of J. Gurney Fowler, Glebelands, South Woodford, clearly shows. It may easily be distinguished by this character, combined with the distinctly obovate shape of the front lobe of the lip. For a complete account of the varieties of this beautiful hybrid we refer our readers to page 235 of our last volume, where they are treated in detail; also L.-c. × Schilleriana, some of the forms of which are often confused with L.-c. × elegans.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

GENERALLY speaking the first meeting after the Temple Show shows a marked falling off in the number of exhibits, but this year furnishes a marked exception, as the exhibits at the Drill Hall, James Street, Westminster, on June 12th, were above the average, and the work of the Orchid Committee was exceptionally heavy, nearly a hundred subjects, including the groups and the competitive class for new Orchids having to be adjudged.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), contributed a very interesting collection, containing many interesting botanical species. Five of them were selected for Botanical Certificates, namely, Bulbophyllum barbigerum, the rare Promenæa macroptera, the pretty little Polystachya Lawrenceana, P. bulbophylloides, whose specific name is eminently descriptive of its habit, and the pigmy Epidendrum organense (Rolfe). A fine spike of Aërides maculosum Schrœderi, also received a First-class Certificate. Other interesting plants were Dendrobium Bensoniæ album, a form of Odontoglossum × excellens labelled O. Pescatorei Prince of Orange, Octomeria diaphana, and others.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), showed three brilliant Odontoglossums. These were O. crispum Baroness Schröder, an unusually dark claret-purple form, O. c. grande-maculatum, a very fine spotted form, and a remarkable form of O. × Coradinei, exhibited as O. crispum mirabile. The two former received First-class Certificates and the latter an Award of Merit.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), contributed a very fine group, which received a Silver Flora Medal. It contained many fine forms of Odontoglossum crispum, Lælia purpurata, Cattleyas, &c. Two plants which were selected for special awards were Odontoglossum citrosmum Rosefield var., having large white flowers with rosy-coloured labellum, and O. crispum, Miss Florence Bovill, a rose-tinted form blotched with Indian red, each of which received an Award of Merit. O. c. pulvereum had flowers, covered with minute crimson dots.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), also received a Silver Flora Medal for a large and excellent group, including fine Cattleyas and Lælia purpurata, about three dozen well-flowered Miltonia vexillaria, species and hybrids of Cypripedium, various Masdevallias, including M. × Heathii, M. × Gairiana, several forms of M. ignea, M. ephippium, M. Chimæra, and M. calura, the latter receiving a Botanical Certificate. Physosiphon Loddigesii and other botanical Orchids were also included.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), received a Silver Banksian Medal for a good group, including fine specimens of Miltonia vexillaria, one very fine one with sixteen spikes, receiving a Cultural Commendation; Dendrobium atroviolaceum, Epidendrum vitellinum majus, and two splendidly flowered plants of Anguloa Clowesii, this species receiving a First-class Certificate.

E. Ashworth, Esq., Harefield Hall, Wilmslow, exhibited a good Cattleya Mendelii Bluntii.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), sent half a dozen Odontoglossum crispum, including the pure white O. c. virginale.

W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester (gr. Mr. Billington), showed Cypripedium × Beechense, raised from C. Curtisii and C. superbiens.

H. J. Pitt, Esq., Rosslyn, Stoke Newington (gr. Mr. Aldous), received a First-class Certificate for Cattleya Mossiæ alba, Pitt's variety, a very fine form near C. M. Wageneri, but with a little purple marbling near apex of lip.

J. T. Bennett-Pöe, Esq., Holmwood, Cheshunt, showed Lycaste Deppei.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited Selenipedium Sargentianum and a hybrid Odontoglossum allied to O. × Wilckeanum.

W. Thompson, Esq., Walton Grange, Stone, Staffs. (gr. Mr. Stevens), exhibited a fine Lælia tenebrosa, Walton Grange var. (certificated last year), and some fine Odontoglossums, of which the three following each received an Award of Merit, O. crispum aureum, O. × Wilckeanum grande, and O. luteopurpureum sceptrum leopardinum.

R. B. White, Esq., Arddarroch, N.B., sent flowers of many forms of Odontoglossum crispum, including some fine spotted forms.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), sent Phalænopsis speciosa and P. s. Imperatrix, Cattleya Mendelii, Lælia grandis, Wigan's var., with deep yellow sepals and petals, and Dendrobium veratrifolium, which latter received an Award of Merit.

A. Witt, Esq., Bloomfield Road, Maida Vale, sent Cypripedium bellatulum with radiating lines of spots on the dorsal sepal.

The prize for the best new hybrid Orchid of 1894 was won by Messrs. F. Sander and Co., St. Albans, with the beautiful Phaius × Owenianus, which received a First-class Certificate at the Temple Show. Dendrobium Griffithianum Guibertii from the same establishment received a First-class Certificate; Cattleya Mossiæ, R. H. Measures, a handsome blush form with purple blotch on lip, an Award of Merit, and Epidendrum alatum a Botanical Certificate. Oncidium Lanceanum, Pescatorea Klabocharum, P. Lehmanni and Lælio-cattleya × Wellsiana (C. Trianæ Leeana × L. purpurata) were also shown.

Messrs. James Veitch and Sons, Chelsea, sent several very interesting things, including a fine pan each of their new Dendrobium glomeratum and Disa × langleyensis, the rich orange Lælio-cattleya × Hippolyta, and three hybrid Masdevallias, which latter each received an Award of Merit. These were M. × Parlatoreana (Barlæana ♀ × Veitchiana), × glaphyrantha (infracta ♀ × Barlæana ♂), and the new M. × Asmodia (M. × Chelsoni ♀ × Reichenbachiana ♂), which is described on another page.

Messrs. Hugh Low and Co., Clapton, exhibited a fine lot of Cattleya Mossiæ, including C. M. Schrœderæ, with richly-coloured lip, the rare C. × intricata, some good forms of Cypripedium bellatulum, including one with crimson-tinged flowers called C. b. Lowii, and the rare Houlletia Lansbergii, which received a Botanical Certificate.

Messrs. W. L. Lewis and Co., Southgate, received a Silver Banksian Medal for an effective group, including some showy Cattleyas, fine forms of Lælia purpurata, Miltonia vexillaria, Cypripediums, Oncidium ampliatum majus, and Lycaste aromatica. Cattleya Warscewiczii albo-striata was a fine form with white veining.

Messrs. Linden, L'Horticulture Internationale, Brussels, received an Award of Merit for the rare purple Bifrenaria tyrianthina. They also sent a splendid pan of Cochlioda Nœtzliana, Aërides Regnieri, and a fine Lælio-cattleya derived from Lælia purpurata × C. Warneri, evidently a variety of L.-c. × eximia.

CORRESPONDENCE, &c.

Reginald Young, Esq., Sefton Park, Liverpool, sends four beautiful forms of Cypripedium bellatulum to show how much it varies, one especially (of which a photograph is enclosed) having very large dark blotches; a beautiful raceme of Odontoglossum × excellens; two good forms of O. crispum, one being curiously marked all over with short purple radiating lines; and a fine Cattleya Mendelii. The diminutive form of Cypripedium niveum may not be properly developed though the growth is healthy.

C. Winn, Esq., Selly Hill, Birmingham, sends Cypripedium × Silvia (C. Curtisii × Lawrenceanum), a handsome hybrid, the reverse cross of C. × Gowerianum.

M. A. A. Peeters, Brussels, sends a spike of the handsome Miltonia × Bleuana nobilior. The Cypripedium bought as C. Rothschildianum is C. præstans, Rchb. f., a native of New Guinea. We have seen this before under similar circumstances, and have been informed that C. Rothschildianum is not a native of New Guinea.

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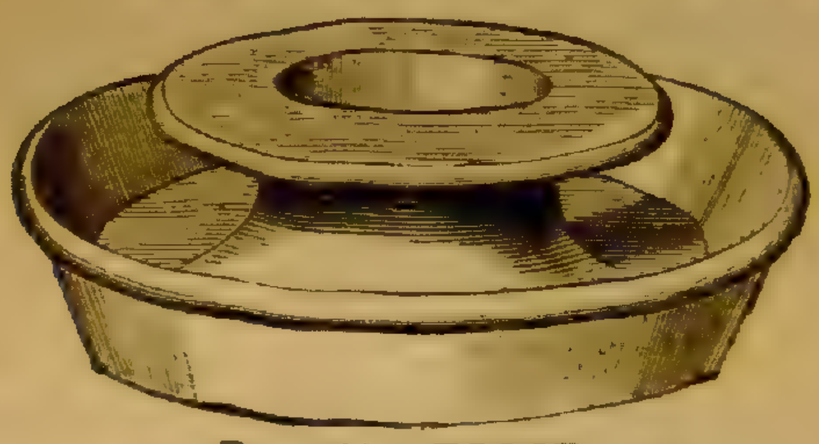

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THE

ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	225
Stanhopea Haselowiana	226
The Hon. Erastus Corning's Orchids...	227
Oncidium refractum	229
Dies Orchidianæ	230
Sarcochilus unguiculatus	231
Notices of Books	232
Gongora Scaphephorus	233
Notes on Orchids in the Jungle ...	234
Cypripedium × Harrisianum virescens	235
Novelties	236
Lælio-cattleya × Schilleriana leucotata	237
Restrepia antennifera and its allies ...	237
Lælia tenebrosa, Hamar Bass's variety	238
Odontoglossum gloriosum with double flowers	238
The Hybridist	239
Odontoglossum crispum well-flowered	239
Miltonia vexillaria, Daisy Haywood...	240
Vanda teres aurorea	240
Lælia tenebrosa, Walton Grange variety	240
A Group of Odontoglossums	241
O. crispum Wolstenholmiæ (Fig. 24)	242
O. c. Rex (Fig. 25)	242
O. c. Capartianum (Fig. 26) ...	242
O. × Wilckeanum excelsior (Fig. 27)	242
Polypodium fibre as a substitute for peat	242
The Walton Grange Collection ...	243
Orchids at Trentham	246
Orchid Portraits	246
Cypripedium bellatulum two-flowered	247
Calendar of Operations for August ...	247
Continental Notes	252
Orchids at the Royal Horticultural Society	253
Correspondence, &c.	256

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THE ORCHID REVIEW.

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NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during August, on the 14th and 28th, respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

The sale of the second part of the Pickering Lodge Collection of Orchids took place on July 11th and 12th, and though not so well attended as the previous one, some good prices were realised, and many lots sold for three guineas and upwards. Cattleya Mendelii Bluntii fetched 100 guineas; Lælia crispa superba, a magnificent specimen, 52 guineas; Sobralia Lucasiana, a fine specimen, 46 guineas; S. xantholeuca alba, in flower, 44 guineas; Cattleya Gaskelliana alba, in flower, 38 guineas; Dendrobium Statterianum, 20 guineas; Cypripedium superbiens, 15 guineas, and several plants of Miltonia vexillaria superba from 10 guineas and upwards.

Mr. P. Weathers, formerly traveller for Messrs. Linden, of Brussels, has commenced business on his own account at Isleworth, under the title of The Orchid Exchange, the object being to enable amateurs to dispose of duplicate specimens, &c. Further particulars may be found in our advertisement columns. A first list has been issued, from which we note the following: Cypripedium Fairieanum, with four growths, 150 guineas; C. insigne Sanderæ, one growth, £70; Lælia Perrinii alba, £50; Cypripedium × Fairieano-Lawrenceanum, 30 guineas; C. × vexillarium superbum, 14 growths, 12 guineas, &c., ranging down to Lycaste cruenta at five shillings. Vendors are required to guarantee all plants true to name, so that, if properly managed, the new concern should prove useful to collectors.

The new Cypripedium Charlesworthii, of which a coloured plate appeared in our issue for December last, has now begun to flower. We have seen many plants in bud, and Messrs. Hugh Low and Co. exhibited four at the Drill Hall on July 24th. It would therefore appear to be a summer flowerer. We shall soon be able to judge of its value, and how far it is subject to variation. It appears to be a very good grower.

A hybrid Sobralia has now appeared, having been raised in the establishment of Messrs. James Veitch and Sons, of Chelsea. It was obtained by crossing S. macrantha and S. xantholeuca, and received a First-class Certificate from the Royal Horticultural Society on July 24th.

A very interesting batch of seedlings has been raised in the collection of F. Hardy, Esq., of Tyntesfield, Ashton-on-Mersey, from Cattleya × Hardyana ♀ and Lælia Digbyana ♂. They are very small at present, and cannot be expected to flower for a number of years, but their progress will be watched with interest.

Cattleya Rex is now flowering in various places. In the collection of T. Statter, Esq., Stand Hall, Whitefield, Manchester, there are nine plants showing bloom, one of them with three spikes. One or two of the flowers are just expanding. About four flowers to a spike seems to be the average. We shall soon be in a position to judge of its merits.

STANHOPEA HASELOWIANA.

This very handsome Stanhopea never seems to have become common in collections, though it was described as long ago as 1855 (*Otto und Dietr. Allg. Gartenz.*, xxiii. p. 322). It was introduced from North Peru by Warscewicz, and flowered in the collections of Herr Haseloff at Berlin. A poor figure is given in Reichenbach's *Xenia Orchidaceæ* (i. pp. 123, 196, t. 72), though the petals and lip are wrongly coloured purple. A plant has now bloomed in the Kew collection, which shows its true character. The flowers have much of the structure of a large S. Wardii, but the mesochil, or middle part of the lip, is longer than in any of its allies. The ground colour is cream-white, with numerous ring-like, reddish purple spots on the sepals and petals, while the lip and column are spotted all over with deep purple spots, some of them being linear in shape. The channel of the hypochil is unusually wide, being nearly a quarter of an inch across at its broadest part, and as much as two lines at its narrowest. The length of the mesochil is evidently exaggerated in the figure above cited, so that S. Moliana, Rolfe (*Lindenia*, t. 331), can hardly be as different as at first supposed.

THE HON. ERASTUS CORNING'S ORCHIDS.

THIS Collection is one of the oldest and most noted in the United States. It is situated a few miles below Albany, New York, at Mr. Corning's summer residence—a farm of over 400 acres. The gardens are under the management of Mr. William Grey, who has held the position for over forty years, and the Orchid collection embraces many hundred species and choice varieties, which occupy six houses.

The first house is nearly one hundred feet long, and is chiefly occupied by Cattleyas and Lælias. The plants are grown on iron gratings, over open tanks of water, many of the roots extending down into it, and are apparently uninjured. At present there is very little of importance in flower, but among the better kinds noted were—Cattleya Trianæ Colmanii (true), C. T. Corningii and C. T. Bonnyanum, C. Warscewiczii Normanii, C. × Pandora, C. × Penelope (type), Lælia anceps Dawsonii, L. a. Ballantineana, L. a. Hilliana, and L. a. Schrœderiana. Here are also a fine lot of Læliocattleyas, including several fine L.-c × exoniensis, L.-c. × fausta, L.-c. × triophthalma, part of the type plant, L.-c. × elegans Turneri, L.-c. × Amesiana, a large plant of L.-c. × bella, L.-c. × callistoglossa, with four leads, and L.-c. × Veitchiana. Some fine specimens of Cymbedium eburneum, with many other species, are well grown at the cool end of this house. No canvas shading is used, but during the summer months the glass is heavily painted.

The Cypripediums occupy a house sixty-five feet long, and comprise very many fine specimens of the leading species and hybrids, such as philippinense, præstans, Druryi, × vernixium, barbatum grandiflorum, with 100 growths; barbatum biflorum, with 20 flowers; × nitens, × Arthurianum, × Smithii, × Niobe, × vexillarium, Stonei platytænium, &c. Of the Selenipediums may be mentioned such fine things as S. × albopurpureum and S. × Schrœderæ.

Successful Orchid hybridisation has been carried on here since 1869, for experimental purposes only. The earlier crosses never reached maturity, but later experiments have developed some interesting results. Cypripedium Godefroyæ ♀ crossed with C. niveum ♂ produced from the same seed pod, C. concolor, niveum, Godefroyæ, leucochilum, C. leucochilum pure white, bellatulum, and nearly fifty intermediate forms.[1] C. insigne Chantini fertilised with its own pollen produced thirty different results; C. × vexillarium similarly treated produced several seedlings, each one differing in some respect or other. C. × Harrisianum and C. × H. superbum crossed with their own pollen produced seedlings none of them exactly like their parent. A piece of the original type of C. Spicerianum crossed with its own pollen

[1] Is there not some mistake here? Seedlings and hybrids do vary somewhat, even from the same seed pod, but many of the differences are very slight. No such case as the one now mentioned has ever been recorded before, and one would like to know more particulars, and see some of the flowers. The experiment should certainly be repeated.—ED.

resulted in twenty-three seedlings, all differing from the parent in some respect. Many hybrids of Phaius, Dendrobium, Cypripedium, &c., have been flowered, but as they had previously been described, no mention was made of them.

Adjoining the Cypripedium house is the Vanda department, and here are many well-grown specimens. The plants are grown in very little material, mostly crocks, with a top-dressing of fine sphagnum, and dry, broken cow-dung. The plants are syringed overhead daily in fine weather, and plenty of air is given at all times. A temperature of 60° to 70° in winter, and 75° to 85° in summer is given, when possible. Among the largest specimens, mostly in bloom, were noted Ærides crispum Lindleyanum, A. expansum Leoniæ, A. Houlletianum, A. Lobii, and A. Rohanianum; of Angræcums may be noted, A. densum, extra large, A. bilobum, A. distichum, A. Ellissii, a large plant three feet high with four growths; A modestum, and A. Scottianum, with many growths in full bloom. Also a grand specimen of the pretty rose-purple flowered Camocrotis purpurea; Saccolabium curvifolium, S. giganteum, S. retusum with four large spikes, &c. In the same house are grown a lot of fine specimen Dendrobiums, mostly out of flower at present, except D. × Corningianum, Dearei, × Fitchianum, a few late nobile, &c. In this portion are many fine Cœlogyne pandurata, and well-grown plants of Chysis.

The Phalænopsis collection is without a rival in the United States, and embraces over five hundred plants, and nearly fifty species and varieties. The plants bear from five to nine leaves, each measuring from twelve to twenty inches in length, and four or five in width, and are entirely free from spot. They are grown on iron grating—in well-crocked baskets, with sphagnum and dry cow manure siftings, under which are grown large ferns for the roots to grow among. The plants are syringed daily in dry weather; air is given at all times; and a temperature of 65° to 75° during winter, and 80° to 90° in summer, is maintained. The appended list includes the finest varieties noticed:—P. Aphrodite alba, P. A. Dayana, with fine coloured base to lip; P. A. erubescens, with flowers flushed with pink; P. A. advena, P. amabilis (grandiflora) aurea, P. cornucervi, with leaves over a foot long; P. Corningiana, P. × casta, P. × Cynthia, a natural hybrid, with leaves like P. Schilleriana; P. delicata, P. denticulata, P. Esmeralda, P. E. antennifera, P. E. fasciata, P. gloriosa, P. × Harriettæ, a unique plant with broad, stiff, light green foliage and white and amethyst-tinted flowers; P. × intermedia, and varieties Portei, and Brymeriana, with large arching panicles of bright flowers; P. × leucorrhoda alba, and P. × l. maculata, P. Lowii, P. Lueddemanniana, with flower spikes eighteen inches long; P. Mannii, crowded with tiny brown barred flowers; P. Mariæ, of the Lueddemaniana group; the tiny white and violet P. Parishii, P. Reichenbachiana; many fine plants of P. rosea; P. Schrœderæ with leaves one foot long and

two fine spikes; P. Schilleriana alba and P. S. striata, P. Stuartiana var nobilis and P. S. punctatissima, P. speciosa vars. Christiana and Imperatrix, P. Vallentini, of the Boxallii section; P. tetraspis, P. sumatrana vars ochracea and sanguinea, P. × Veitchii and var. brachyodon, P. violacea Schrœderiana, and the allied Doritis Wightii.

The Odontoglossums occupy two north houses, and are grown to perfection. Raised shades are used to protect them during summer; the floors are of cement, and the benches of stone, and water-tight, so as to hold an inch of water for evaporation. The following were among the best noted:—O. × Andersonianum and its varieties Ruckerianum and hebraicum; O. cirrhosum Klabochorum, O. Corningianum, O. coronarium, O. crispum, and varieties flaveolum (true), Chestertoni, guttatum, Rothschildianum, Shuttleworthii, Walkerianum, and virginale, O. Dawsonii, O. Denisoniæ, O. × elegans, O. Hallii, O. hystrix magnificum, O. lyroglossum, O. mirandum, O. × mulus, O. nebulosum, O. nævium, O. Pescatorei Shuttleworthiæ, O. P. roseum, and others; O. polyxanthum, O. præstans, O. prænitens, O. purum, O. radiatum, O. ramossissimum, O. Sanderianum, O. × tentaculatum, O. tripudians vars. aureum, O. t. Harryanum, O. triumphans, O. Vuylstekianum (type), O. Wallisii, O. × Wilckeanum and var. pallens. There are also some very fine specimens of Miltonia vexillaria, two or more feet across, with twenty to thirty-five spikes of bloom, and many of the growths eighteen inches in height.

Many other genera might be mentioned, such as Lycaste, Maxillaria, Calanthe, Phaius, &c., but the above mentioned will serve to give an idea of the extent and richness of the collection.

Orange, New Jersey. R. M. GREY.

ONCIDIUM REFRACTUM.

We have now evidence for the first time of this excessively rare species being in cultivation, a plant having just flowered in the collection of M. Alfred Van Imschoot, of Gand. It was described by Reichenbach in 1854 (*Bonplandia*, ii. p. 12), from specimens collected by Purdie, ten years before, at St. Sebastian Nevada, Santa Martha, New Granada. Wagener also obtained it at San Pedro, in the province of Ocaña. It belongs to Lindley's group, Microchila exaurita, and is allied to O. *zebrinum*, Rchb. f. Nearly all the species of this group have a straggling inflorescence, and the flowers being mostly small, they are chiefly of botanical interest. The present species is remarkable for the much reflexed column, and front part of the lip. The flowers are light greenish yellow, barred with dusky brown, the sepals and petals being undulate and much acuminate. We have no record of the introducer of the present species, nor yet how long it has been in cultivation.

DIES ORCHIDIANÆ.

ORCHID books seem to be just now in the ascendant. No sooner have Messrs. James Veitch and Sons completed their standard *Manual of Orchidaceous Plants* than we have to welcome the seventh edition of Mr. B. S. Williams's *Orchid Grower's Manual* in a new and greatly improved dress. M. L. Linden has also just issued his *Orchidées Exotiques et leur Culture en Europe*, while the *Livre des Orchidées* of M. le Compte de Kerchove is announced to be ready on August 1st. Besides these we have the less pretentious little *Amateur Orchid Cultivator's Guide Book* of Mr. H. A. Burberry, which will prove so useful to beginners. All this testifies to the growing popularity of these beautiful plants, and I fancy the day is far distant when they will go out of fashion. Cultivators of Orchids have certainly no reason to complain of a lack of literature relating to their favourite group.

Cypripedium Charlesworthii is now beginning to flower, and I have seen five expanded blooms, with plenty of buds to follow. Although too soon to judge of its real merits, its distinctness and beauty are evident enough already, and a certain amount of variation may be anticipated. Already I hear a white variety spoken of, as if it were something desirable, which surely illustrates the perversity of human nature. The species was specially welcomed because it introduced a new colour in the genus, and now a variety is anticipated in which that colour shall be absent. At all events it is likely to be rare, and that is something in its favour. The species would appear to be a summer bloomer, after all. But of this and other points we shall be better able to judge in the future.

Are we going in for a race of greenhouse Orchids? It seems to me that the hybrid Disas, of which we have heard and seen so much lately, may be thus described. They seem to require little in the way of heat, if only frost is kept away. They grow like weeds, only requiring suitable compost, plenty of water, and a little shade. And their beauty is undeniable. Their vigorous constitution is no doubt largely derived from D. tripetaloides and D. racemosa, which are very free growers, quite unlike D. grandiflora in this respect. More variety will probably be introduced by re-crossing and selection, now that the work has been taken in hand, and I think that the pollen of some other species might be tried—notably of the blue Disas—as in this way more variety might be introduced. Judging by recent events they seem to be particularly promising subjects for the hybridist, and further developments may be anticipated.

What's this I see? "One hundred lots of Eulophiella Elisabethæ . . . received direct, for unreserved sale, on Friday next, July 27th, at half-past 12 o'clock." Received direct, too! Whatever will M. Hamelin say? A year ago I read, "Excepting young and very small plants, no more Eulophiella are to be found, and the plants left will be guarded by my brother-in-law until they may be wanted by me. At least several years must elapse before these small plants are large enough to gather. Amateurs of this superb Orchid may be sure that no plants can or will be imported. I can guarantee that no man can collect them. My brother-in-law's will is absolute in the country of the Eulophiella." These new one hundred lots, received direct, form a rather curious comment on the above remarkable story, to which I have already had occasion to allude at page 101. I should think its real value is pretty well understood by this time.

I have had occasion already to allude to the nomenclature question, and now I am glad to see, in a recent number of *Garden and Forest*, a protest against the long names used in some cases to indicate a variety. A varietal name is desirable and necessary in many cases, but when it requires three and four names to indicate it, as in some recent cases, the whole thing becomes a farce. I think the variety question is being overdone, and needs to be reconsidered in several respects, for I frequently discover the same variety in different collections under different names, which is extremely confusing. I may have to recur to the subject on a future occasion.

ARGUS.

SARCOCHILUS UNGUICULATUS.

This is at once the new Phalænopsis fugax (Kranzlin in *Gard. Chron.*, 1893, ii. p. 360) and the old Sarcochilus unguiculatus (Lindl. *Bot. Reg.*, xxvi., *Misc.*, p. 67), though its relation to the former genus is visionary. It was originally sent from Manilla by Mr. Cuming, and flowered with Mr. Bateman in 1840. Last year, on its appearance in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, it was described as a Phalænopsis with a new type of labellum. The flowers are very pale yellow, with some light purple stripes on the side-lobes of the lip. It is a well-known species, but not sufficiently attractive to be cultivated except in a few botanical collections, especially as the flowers only remain open for a few hours. Mr. White's observations on this point are interesting—namely, that they open about nine in the morning, and begin to fade at two or three o'clock in the afternoon—for the fact was not so definitely recorded before. It is hardly necessary to add that it is not a Phalænopsis at all, and that the new name must be relegated to the already far too extensive "Index Expurgatorius."

NOTICES OF BOOKS.

The Orchid Grower's Manual. By Benjamin Samuel Williams, F.L.S., F.R.H.S. Seventh edition, enlarged and revised to the present time. By Henry Williams, F.L.S., F.R.H.S. Super royal, 8vo, pp. 796, with numerous illustrations. London, B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, N.

When a book has reached its seventh edition there is little need to say anything in its favour, and that is the proud position in which the modest little *Orchid Grower's Manual* of 1852 now finds itself—a handsome volume of nearly eight hundred pages in super royal octavo, with over three hundred illustrations. The contents of the work are well known, and as the present edition is brought down to date by the addition of the numerous novelties which have appeared during the last nine years, it forms a thoroughly reliable volume for the Orchid grower of the present day. The additional space required is largely provided for by an increase in the size of the page, by which the work has still been kept within the limits of a single volume. We note the addition of a list of botanical works referred to, and the omission of the chapter on Greenhouse and Frame Orchids, though the loss is more apparent than real, as the information is for the most part embodied in the work itself. A few more improvements might have been introduced in the nomenclature. The numerous hybrids between Lælia and Cattleya are now classed under Lælio-cattleya, in accordance with the modern system of naming generic hybrids, but Lælia Boothiana still stands as Cattleya lobata, and Lælia crispa and pumila only find their correct names in the "Corrigenda," where they are apt to be overlooked. These, however, are only cases of the persistence of old names after their real position has been pointed out, and the same may be said of Uropedium, which is now known to be an abnormal state of Selenipedium caudatum, whose characters have become fixed. Lindley's mistake with regard to Phalænopsis amabilis might, however, have been corrected, and in any case "Java, Amboyna, Philippine Islands" is incorrect, for the Philippine plant is different from that of Java and Amboyna. The cultural directions given are sound and practical—in fact, the *Orchid Grower's Manual* has been one of the most potent factors in the extension of Orchid culture, and in its present form will prove as useful as ever.

Les Orchidées Exotiques et leur Culture en Europe. By Lucien Linden. Large 8vo, pp. 1019, with 141 engravings. Brussels, L. Linden, 100, Rue Belliard.

Our Belgian friends have long been enthusiastic cultivators of Orchids, and now they have an adequate text-book on the subject, worthy to rank beside our own excellent works. The volume before us contains over a

thousand pages of well-printed matter, very well arranged and indexed, and illustrated with numerous figures. In the preparation of the work M. L. Linden acknowledges the assistance of M. Alfred Cogniaux for the scientific portion, and M. G. Grignan. It is dedicated to M. J. Linden, and is divided into four parts—Orchids from a scientific standpoint, Orchids in a natural state, Culture of Orchids in Europe, and Descriptions of the principal Orchids cultivated in Europe, with an Introduction. The first three parts are divided into thirty-four chapters, in which the various subjects involved are treated in detail, though the historical portion is particularly weak, and we fail to find any mention of Thomas Lobb, who is certainly entitled to a very high place among "Les principaux explorateurs." It may also be pointed out that the curious enumeration of plants composing a large collection in 1848 originally appeared at p. 141 of our last volume. The cultural portion of the work is excellent, and is treated in great detail. The enumeration of cultivated Orchids occupies nearly half the volume, and contains an excellent selection, though no indication is given either of authorities, native countries (except in a very few instances), or published figures, an omission which we consider unfortunate in a work of reference. True, there is a chapter on geographical distribution earlier in the book, also a list of figures published in the *Lindenia*, though we think that the details would have been better incorporated with the descriptions, and that other important figures should have been included. We hope to see some of these points rectified in a future edition. As a cultural work it is thoroughly comprehensive, and embodies the experience of a very successful Orchidist, which is a satisfactory guarantee of its excellence.

GONGORA SCAPHEPHORUS.

It is very curious how long certain Orchids may be lost sight of. The above is a very curious Peruvian species, which was described as long ago as 1854 (Rchb. f. in *Bonplandia*, ii. p. 98). It was collected by Warscewicz, and was cultivated in the celebrated collection of Consul Schiller, of Hamburg, and M. Pescatore, of Paris, though it soon seems to have been lost sight of. On its reappearance a year or two ago it was thought to be new, and was exhibited as G. Charlesworthii, and afterwards described (*supra*, i. p. 198), though its identity with the long-lost plant is now apparent. It bears a long arching raceme of numerous flowers, which are curiously blotched and spotted with purple-brown on a light ground, the very curious lip being yellowish white, with a few maroon-purple bars towards the base. The petals are very small, and the reflexed side-lobes of the lip oblong, obtuse, and concave. The flowers have a very pleasant aromatic fragrance. A plant has now flowered in the collection of H. J. Elwes, Esq., Andoversford, Gloucestershire. R. A. R.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 138.)

I previously suggested that for a winter excursion for an Orchidist I could imagine no more charming spot than Moulmein. Situated on the Salween river, there is easy access to the interior by water. Just above the promontory on which Moulmein is situated the River Attaran pours its waters in from the south-east; a little higher up the Salween is joined by the River Gyne, which enters it from the north-east.

Each river is worth exploring, the best plan being to charter a boat and put up at the different villages. Every halting-place will be found rich in Orchids in great variety, including popular varieties well known in England, and botanical curiosities of great interest, many of them no doubt still undescribed.

Of the Formosæ section of Dendrobium, the variety D. formosum is scarce in the delta of these rivers, the plants being more generally found towards Amherst and along the sea coast. At a distance from the sea its place is taken by D. Draconis (D. eburneum of Parish). This plant has a very wide distribution, I came across it in all parts of Burmah from north to south, and that it extends into Siam I know, as I received plants of it from the Consul of Siam, which I still have in my collection, and which I consider one of the best forms, as it has such a good constitution and flowers with me regularly every year. It is a heat-loving variety, and I have often found the plant crowded with flowers all down the stem, when it is a beautiful sight. In England it generally confines itself to producing a bunch of flowers at the top of the completed growth. My experience with this plant is that it does not flourish many years grown in a pot; but grown on a block of wood it is a perfect success. I have a plant so cultivated, which has flowered regularly every year for twelve years. It is a very sweet-scented Orchid.

In noticing the other nigro-hirsute Dendrobiums found within easy distance of Rangoon, I may mention the extremely sweet-scented D. scabrilingue (D. hedyosmum). It is found more sparingly near Moulmein than farther in the interior. At Pegu it abounds, and being always found in the low country it requires heat. I find it does well in shallow pans. South of the Attaran river its place is taken by Dendrobium cruentum, which has very much the same habit as D. scabrilingue. Its habitat is about 13° N., and it consequently requires great heat and moisture to grow it successfully. It is like many others of this section, as it does not like much potting material, it is a charming Orchid and flowers very freely all up the stem in its native home. There is a nice figure of it in the *Orchid Album*, plate 174.

Further in the interior and on trees on the lower range of hills are found D. longicornu and D. cariniferum. These two plants I never found in the hot plains, and they may be considered intermediate between the heat-loving Formosæ and the mountain forms. These two varieties do not require to be grown in so much heat as the others, but they require more than the two special mountain forms, D. Jamesianum and D. infundibulum.

In *Veitch's Manual*, D. Jamesianum is considered a variety of D. infundibulum, but I never found them growing together on the same hills. Each variety is confined to its own range of mountains. "Theobald," in his remarks on the land shells of Moulmein, remarks that each isolated group of hills has its own peculiar land shells, nearly allied to each other but quite distinct, and probably the same remark would equally apply to certain groups of Orchids.

On the very top of the range of mountains which can be seen from Moulmein, grows in abundance a short robust form of D. Jamesianum. It is found growing abundantly on the rocks and also on the trees. The flowers of this variety are very rich in colour, but the plants are dwarf and robust in habit, quite different from the variety found on the southern range of the Arracan hills, where the plants are found extremely abundant; and in habit quite four times the size of the Moulmein hill plants.

D. infundibulum is found in the ranges of hills further away from Moulmein, and also in the north of Arracan far up the River Kuladan, in the hills which are probably the source of this river. There is no doubt that both D. Jamesianum and D. infundibulum require quite different treatment from the other forms. They are essentially mountain varieties, and they continue to grow throughout the winter, flowering abundantly in the spring. I have seen, in the Arracan hills, five hundred plants of the variety Jamesianum in flower at one time, forming a grand sight. So profusely do these plants flower in their native habitat, that the plants become much shrivelled, and should the heavy rains be delayed many of the plants die.

I should say of these two varieties, judging from the conditions under which they grow abroad, that they should be grown warm in winter and cool in summer in our houses at home, and I have experienced no difficulty in keeping them in good condition when treated in this way. They are two of the most useful of the Formosæ section, as they last such a long time in flower.

(To be continued.)

CYPRIPEDIUM × HARRISIANUM VIRESCENS.

The appearance of a green variety of Cypripedium × Harrisianum can now be recorded, as it flowered a short time ago in the collection of H.

Little, Esq., The Barons, East Twickenham, where we had the pleasure of seeing it. It differs from the typical form in having lost all the purple-brown markings, leaving the flower wholly yellowish green, and thus is a case of albinism. It had shown the same peculiarity in previous years before coming into Mr. Little's possession. We learn that the plant has now passed into the collection of R. I. Measures, Esq., of Cambridge Lodge, Camberwell.

NOVELTIES.

SOBRALIA MACRANTHA VAR. HODGKINSONI, Rolfe.—This is an exceptionally large and beautiful variety, from the collection of Alex. Hodgkinson, Esq., The Grange, Wilmslow, Cheshire. The sepals are four inches long by eleven lines broad, and of a pale delicate rosy lilac, nearly white on the outside; the petals sixteen lines broad and brighter in colour, while the lip is over three inches broad in front and of the usual brilliant rose-purple tint, but with the whole of the throat and a little outside it of a very bright yellow, becoming light orange on the veins of the disc. The plant has the strong habit and general appearance of S. xantholeuca, Rchb. f. Mr. Hodgkinson bought it at the sale of the late Mr. Statter's collection, whence it had been obtained from Messrs. F. Sander and Co., St. Albans, who imported it with S. xantholeuca in 1886 or 1887. I have known it since March, 1891. It is altogether an exceptional variety of great beauty, and at first sight looks like something else, though the resemblance of S. macrantha is so great, that I think it must be placed as a variety of this species.

MEGACLINIUM NUMMULARIA, Wendl. and Kränzl.—A very small species, from the collection of Mr. Wendland, of Herrenhausen, which had been sent from the German Cameroons by the late J. Braun. It is allied to M. minutum, Rolfe, but has ciliate flowers. The bulbs are flattened, the leaves an inch long by half as broad, and the raceme half an inch long, with about six or eight green and purple flowers, the dorsal sepal being wholly dark purple.—*Gard. Chron.*, June 2nd, p. 685.

BULBOPHYLLUM HOOKERIANUM, Wendl. and Kränzl.—A West African species, from the collection of Mr. Wendland, of Herrenhausen, and supposed to be identical with one collected long ago by Gustav Mann; though if the description is correct, it is as certainly different. It bears a raceme of small orange-coloured flowers.—*Gard. Chron.*, June 2nd, p. 685.

ANGRÆCUM FOURNIERIANUM, Kränzl.—A native of Madagascar, introduced by Messrs. F. Sander and Co., St. Albans. The flowers are greenish white, about two inches long, and borne in long racemes. It received an Award of Merit from the Royal Horticultural Society on June 26th last.—*Gard. Chron.*, June 30th, p. 808.

LÆLIO-CATTLEYA × SCHILLERIANA LEUCOTATA.

This is the plant recently figured in the *Lindenia* (t. 313) as L.-c. × elegans leucotata, though the above is its correct name, for the two hybrids are distinct both in character and parentage, as was pointed out at p. 235 of our last volume. The figure just cited represents a pure white variety, which is said to have bloomed in the houses of L'Horticulture Internationale, Brussels, in May 1893, from a newly-imported plant. It subsequently passed into the collection of R. H. Measures, Esq., The Woodlands, Streatham, for the sum of £150, the purchase being made entirely on the strength of the coloured drawing. This year it has again flowered, but instead of being pure white the blooms are slightly flushed with pale rose, which is quite distinct on the back of the sepals, and consequently the accuracy of the drawing has been called in question. We have received several documents relating to the point in dispute, and a fresh flower. With regard to the latter it is the nearest approach to an albino we have seen, and the front lobe of the lip is as light as the rest of the flower, but it is not pure white. With regard to last year three gentlemen who saw the flowers, namely, Dr. Capart, M. A. Madoux, and G. Miteau, have certified that the plate is correct. But we venture to say that the pedicels of the flowers were never green like the leaves, as is represented in the plate. Then there is the statement by W. H. G., in the *Orchid Album* (in a note under t. 469), that the plant was in flower last year at The Woodlands, which is evidently pure romance. Whether it was made up from a look at the plant and another at the painting we know not, but we are assured that no bloom was ever seen there until this season. As to the rosy flush in the flower, future bloomings may throw further light on the question.

RESTREPIA ANTENNIFERA AND ITS ALLIES.

It is curious what confusion has been introduced into the histories of some of our garden Orchids. Restrepia antennifera, the type of the genus, furnishes a very good example. This species is supposed to be well known in gardens, though in reality it has been confounded with another species, which has usurped the name, as I have just been able to ascertain. It was originally described and figured in 1815, from a plant collected near Pasto, in New Granada (*H. B. K. Nov. Gen. et Sp.*, i. p. 367, t. 94), and is distinctly stated to have the lateral sepals striped ("striato-nervosa, fusco-flavescentia, interne coccineo-striata"). Our well known garden plant of this name, with spotted flowers, which was sent by M. Gustav Wallis to M. Linden, and flowered in 1869 (Rchb. f. in *Gard. Chron.*, 1869, p. 1254), is really R. maculata, Lindl. (*Orch. Lind.*, p. 4), another New Granadan species, to which all the garden figures of so-called R. antennifera belong.

A second species which has been confounded under the same name is R. guttulata, Lindl. (*Hook. Comp. Bot. Mag.*, ii. p. 356), a native of Ecuador, which, so far as I can ascertain, has never been introduced to cultivation. It is taller than R. maculata, and, according to dried specimens, has larger and more brightly-coloured flowers. The true R. antennifera, H. B. K., is extremely rare in cultivation and seems to have only appeared during recent years, for I fail to find any record of it. It flowered with M. Ch. Vuylsteke, of Loochristy, Gand, in January, 1892, though its identity has only just been discovered, and now it has appeared with Messrs. W. L. Lewis and Co., Chase Side, Southgate. It is much like R. maculata in size and shape, but each lateral sepal has seven light purple stripes on a pale whitish yellow ground. It must not be confounded with R. striata, Rolfe (*Gard. Chron.*, 1891, i. p. 137), though it is more likely to be taken for it than for R. maculata. Although only recently introduced to cultivation, it has long been imperfectly known from dried specimens, and both Wagener and Schlim recorded that it had striped flowers, while the latter also noted that R. maculata had spotted flowers. And curiously enough Reichenbach recorded the striped one under its correct name in 1855 (*Bonplandia*, iii. p. 70), and pointed out how it differed from R. maculata, though fourteen years later, when the spotted one appeared in cultivation, he followed Lindley, who in 1859, had confused the two (*Lindl. Fol. Orch.*, Restrep. p. 1). In future, however, we must limit the name of R. antennifera to the striped one, and restore that of R. maculata to the common garden plant. R. A. R.

LÆLIA TENEBROSA, HARMAR BASS'S VARIETY.

A very dark and richly-coloured variety of Lælia tenebrosa has flowered in the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, which has received the above name. Mr. Hamilton, who kindly sends a flower, states that it was purchased from Messrs. F. Sander and Co., in 1892. Once or twice before we have seen something like it; in fact, it represents the maximum development of the species both in size and colour. It is a really magnificent thing.

ODONTOGLOSSUM GLORIOSUM WITH DOUBLE FLOWERS.

Some time ago we received from R. le Doux, Esq., Marlfield, West Derby, Liverpool, a flower of Odontoglossum gloriosum with two columns and twice the usual number of segments, affording an example of the fusion of two flowers in one. This has occasionally been seen before in the case of O. crispum and other species, but the curious thing in this case is that no less than five of the flowers on the spike were perfectly double, as we learn from Mr. le Doux, a thing not observed before to such an extent. The peculiarity is not likely to be permanent.

THE HYBRIDIST.

Disa × Diores.

When the beautiful Disa × Veitchii flowered for the first time in the establishment of Messrs. James Veitch and Sons, in June, 1891, Mr. Seden at once crossed it with the pollen of D. grandiflora, one of the original parents, with a view to further developments. The seeds were ripe in October, and were at once sown, and now, in the third season, the plants have begun to flower. The first flower is now before us, having just been received from Messrs. Veitch. As might be expected, it shows a considerable approach to D. grandiflora, though very much paler in colour, and the dorsal sepal nearly white. It is a very promising thing, and in all probability is not yet fully developed.

Sobralia × Veitchii.

We have now a hybrid Sobralia to record, and a most beautiful one too. It was obtained by Mr. Seden, by crossing S. macrantha with the pollen of S. xantholeuca. At present the plant is about a foot and a half high. The flower is nearly white with a faint tinge of blush, and the front and sides of the lip more strongly flushed with rosy lilac, especially round the margin, and the tube light yellow. In shape and size it closely approximates to the two parents. It was exhibited by Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, at the meeting of the Royal Horticultural Society on July 24th, and received a First-class Certificate.

Lælio-cattleya × Frederick Boyle.

This is the very interesting hybrid, mentioned on page 189, for which Messrs. F. Sander and Co. received an Award of Merit at the recent Temple Show. It was raised from Cattleya Trianæ ♀ and Lælia anceps ♂, and is fairly intermediate in character. The flower is white, with a little yellow at the base of the lip, and a light rose-coloured front lobe. The lip is nearly entire, but in other respects it most resembles the Lælia parent. It is very beautiful, and is likely to develop into a very superb thing when it becomes stronger.—*Gard. Chron.*, June 30th, p. 809, fig. 105.

ODONTOGLOSSUM CRISPUM WELL FLOWERED.

An unusually fine specimen of this beautiful species is recorded from the collection of W. C. Stobarts, Esq., Spellow Hill, Boroughbridge, Yorks. It bore three spikes, the central one being branched, and having thirty-four flowers, and the other two seventeen and fourteen respectively. Another plant in bud is said to have fifty-four flowers. These members are very unusual, and afford evidence of very good culture.

MILTONIA VEXILLARIA, DAISY HAYWOOD.

This a white variety of great size and spotless purity, from the collection of T. B. Haywood, Esq., Woodhatch, Reigate, of which an eight-flowered raceme has been kindly forwarded. One of the flowers measured exactly three and a quarter inches across the lip. It received a First-class Certificate from the Royal Horticultural Society on July 25th, 1893, and on June 24th of the present year a Cultural Commendation was awarded to the magnificent raceme just mentioned. The only colour in the flower is the light yellow disc. A spike of the typical form, with flowers of nearly equal size, was also included.

VANDA TERES AUROREA.

This beautiful variety appeared in 1881 in the collection of Mr. W. Bull, of Chelsea, and was described by Reichenbach (*Gard. Chron.*, 1881, i. p. 688) as having flowers snow white, with a light rosy hue on the anterior part of the lip, and some light yellow in its throat. It is near the variety candida (Rchb. f. in *Gard. Chron.*, 1875, ii. p. 225) which, however, is described as being white with only the addition of a little yellow on the lip. The *Orchid Album* figure (vol. ix. t. 409) shows a distinct stain of pink on the front lobe of the lip, and, as it is not from the original plant, would appear to be var. aurorea, rather than candida. The fact is the name aurorea has been transferred to a form with a light suffusion of pale rose in the sepals and petals, though we must retain it in the sense in which it was first applied. A very fine plant has been flowered in the collection of Reginald Young, Esq., Sefton Park, Liverpool, producing three spikes on the same stem, the strongest bearing five flowers of great size and beauty, which have been kindly sent by Mr. Young. The petals are two inches across, the front lobe of the lip lightly suffused with pale rosy purple and the throat light yellow, the rest of the flower being pure white. It is a very charming variety.

LÆLIA TENEBROSA, WALTON GRANGE VARIETY.

This is the very distinct and beautiful variety from the collection of W. Thompson, Esq., Walton Grange, Stone, Staff. (gr. Mr. Stevens), which received a First-class Certificate from the Royal Horticultural Society on August 8th, 1893, and which was again exhibited on June 12th, last. Mr. Thompson has kindly sent a flower which shows the following characters. The sepals and petals are of a beautiful shade of light canary yellow or citron, and the lip white with a deep purple disc, from which extend a few radiating lines towards the margin. It is a wonderfully distinct and most beautiful variety. The shape is naturally that of the typical form.

A GROUP OF ODONTOGLOSSUMS.

THE choice varieties of Odontoglossum shown in the annexed illustration were all certificated at the recent Temple Show, and we have great pleasure in presenting our readers with an exact portrait of four such beautiful forms. The three larger ones, each of which received a First-class Certificate, are from the rich collection of Baron Sir Henry Schröder, of The Dell, Egham, and the smaller one, to which an Award of Merit was given, from

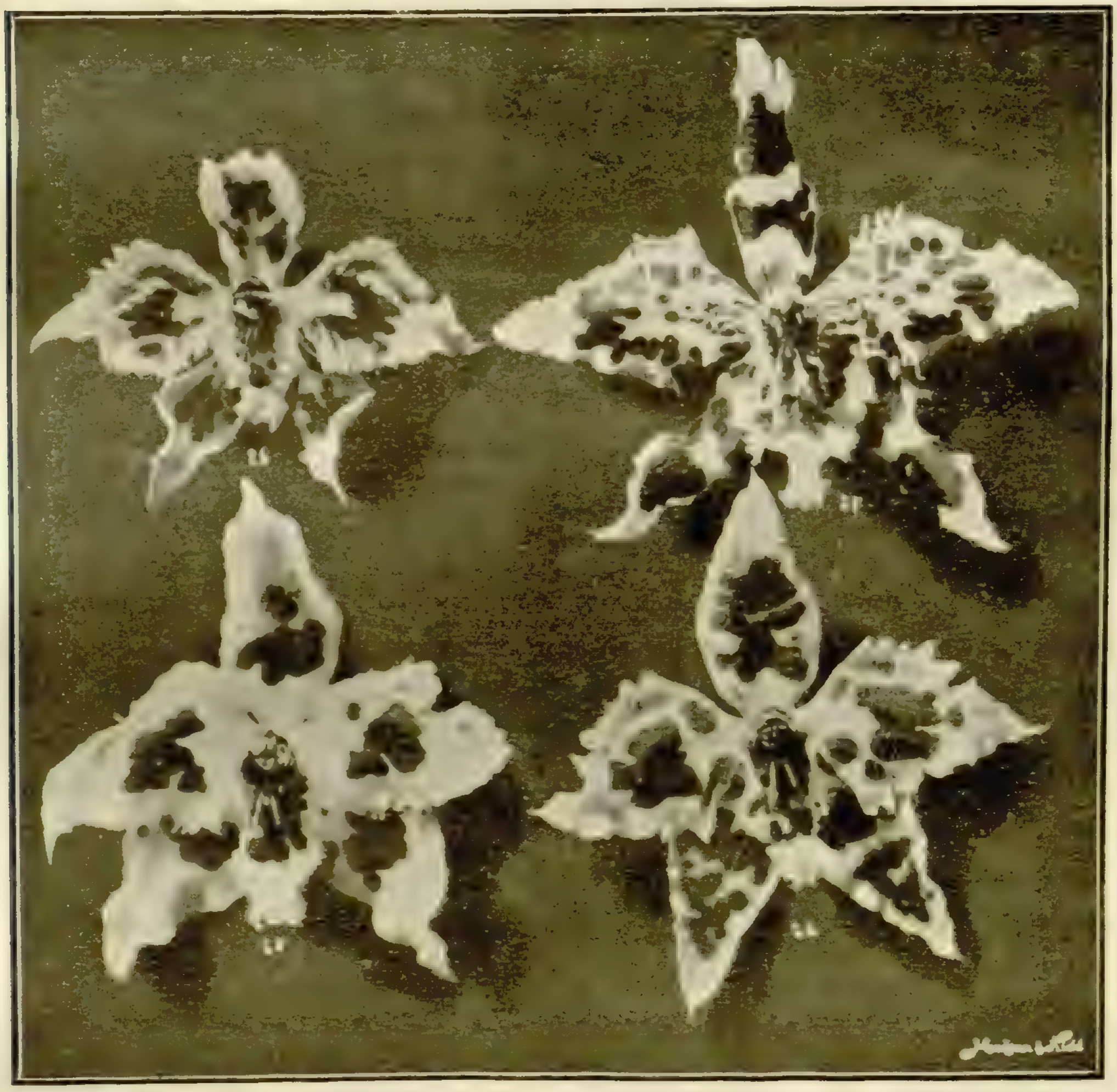

Fig. 24. ODONTOGLOSSUM CRISPUM WOLSTENHOLMIÆ.

Fig. 25. O. C. REX. Fig. 26. O. C. CAPARTIANUM.

Fig. 27. O. × WILCKEANUM EXCELSIOR.

that of M. A. A. Peeters, of Saint Gilles, Brussels. All were supposed to be varieties of O. crispum, but the upper right-hand one is certainly a form of O. × Wilckeanum, as will be seen below. In each case the bottom flower of the spike is shown, and of two of them better flowers could have been selected. The photograph was kindly taken by Henry Little, Esq., of The Barons, Twickenham, and represents the flowers a little under two-thirds natural size.

Odontoglossum crispum Wolstenholmiæ (Fig. 24) is a well-shaped and very beautiful variety, in which the ground colour is slightly suffused with pale rose, and the reddish purple blotches well distributed over the surface of the sepals and petals. The petals are broad and nicely toothed.

O. c. Rex (Fig. 25) is a superb variety with broad sepals and petals and a nearly clear white ground, each having a large irregular red-purple blotch about the centre, with a very few smaller ones near it. The lip is similar, with a good deal of colour round the crest. The colours are sharply contrasted and the blotches very clearly defined, giving it a bold and striking appearance. The spike bore ten flowers.

O. c. Capartianum (Fig. 26) is smaller than O. c. Wolstenholmiæ, which, however, probably arises from the plant being small and weak, and when it becomes stronger it may be equal to it in size. The colours are also very similar, but the ground is a little more suffused with light rosy purple, and the markings on the petals arranged more in zones. It is very beautiful and is sure to improve.

O. × Wilckeanum excelsior (Fig. 27) was certificated under the name of O. crispum excelsior, but must be amended as above, for the general shape of the flower, together with the crest and column wings, all show the unmistakable influence of O. luteopurpureum, as in other forms of O. × Wilckeanum. Baron Schröder fully agrees with this view, and writes to say that the same idea occurred to him when looking at the flower. The ground colour is ivory white, and the markings cinnamon-brown, some of them being darker than others, as shown in the photograph. It is a well-shaped and very handsome variety.

On a future occasion we intend to illustrate another very interesting group, of which we have an excellent photograph.

POLYPODIUM FIBRE AS A SUBSTITUTE FOR PEAT.

On the Continent polypodium fibre is largely used as a substitute for peat, to which fact the success attained with Odontoglossums and certain other genera has been largely attributed. It has also been adopted by several growers in this country with the best results. Messrs. B. S. Williams and Son, Upper Holloway, have used it for some time for Odontoglossums, Oncidiums, and allied genera, also for Cattleyas and Lælias, and find that the plants show a great improvement on those potted in peat and grown under exactly identical conditions. The fibrous roots alone are used; any pieces of rhizome being discarded. It is obtained from the Ardennes, where Polypodium vulgare grows in enormous quantities on the rocks and trees, the masses of roots being taken off and packed in bales. It should

be cut very small with shears, mixed with cut sphagnum moss, and then used in the usual way. One great advantage is that it contains no fine earthy matter, and the plants can be watered freely without the slightest risk of the compost becoming sour, while the roots soon take complete possession of it. Periodical top-dressings may also be given, with the best results. In certain cases the improvement shown is estimated by Mr. Williams at almost one hundred per cent., and certainly the plants of Odontoglossum crispum and others are in the most robust health, while the same may be said of Lælia purpurata and others now established in it. As the treatment is not varied in any other particular, it is clear that the improvement shown is due to the compost alone, and we have much pleasure in recommending its extended use. It will not do for everything, however, as Dendrobiums are said to show no improvement, while Cypripediums placed in it are a failure—which might be expected, seeing that they are terrestrial and prefer good fibrous loam to peat.

We believe that M. Massange was one of the first to introduce polypodium fibre for potting Orchids in, and that its use was rather a matter of necessity than choice. The fact is, Orchids will not succeed in bog peat, to which class most of the Belgian peat belongs, hence the experiments with a likely substitute so close at hand. And as the roots alone are used, we do not see why the supply should fail, or that the polypodium should be exterminated as one of our readers has suggested. Another states that he finds a difficulty in obtaining it, as very little seems to be known about it in this country. It may however be obtained in small bales from some of the dealers, who should make the fact more widely known. We hope some of our readers who have tried it will give us the benefit of their experience.

THE WALTON GRANGE COLLECTION.

THE collection of W. J. Thompson, Esq., of Walton Grange, Stone, Staffordshire, has long been famous for its Odontoglossums, which are prime favourites with their genial owner. Other groups are well represented, as will presently be seen, but this genus occupies the post of honour, and consequently forms a centre of special interest. The collection is a representative one, as regards cultivated species, and moreover, contains a large number of superb varieties of various kinds, nearly three thousand plants being grown altogether. They are also well cultivated and in splendid health—in fact, one plant of O. crispum has been in the collection for a quarter of a century, which speaks volumes for the sagacity and intelligence of Mr. Thompson's gardener, Mr. Walter Stevens, who is almost a part of the collection which has been under his charge for this period. During May last we had the pleasure of seeing over two hunrded spikes of various kinds

expanded in one house, which were tastefully arranged with maidenhair ferns, forming a perfect picture of loveliness. Many were already over, but still greater numbers were coming on to keep up the succession. It is interesting to note that as an experiment a large number of plants have been potted in polypodium fibre, and we hope to be able to note the result on a future occasion.

The popular O. crispum may be mentioned first, being represented in large numbers, both in and out of flower. Many imported plants are not yet proved, and of these the inferior kinds will be discarded as they flower, so as to make room for the better kinds. One splendid plant bore two spikes from the same bulb, one carrying fifteen fine flowers, and the other thirteen. One of the largest forms of this species we have met with was out of bloom, but a dried flower measured over four and a quarter inches across its broadest diameter, so that it must have been considerably larger when alive. This was O. c. Thompsoni, a form with broad and much toothed petals, which, as well as the sepals, are heavily blotched with chocolate. A dried flower of O. c. apiatum from the type plant was a full half-inch smaller. O. c. variegatum—for such it may be called—had the pseudo-bulbs and leaves striped with yellow and green, much in the way of the old-fashioned ribbon-grass. The plant is quite healthy, and the flowers well-shaped. Two other curious forms of considerable interest were observed. One has the curious habit of producing young plants on the top of the old ones, which may be taken off and propagated; the other produces its flowers singly in succession, in a very unusual manner, the spike first growing a short distance, then halting while the flower is developed, then again elongating and producing another, and so on throughout the summer. Both forms have proved constant in character. Among various other good and interesting forms, was one very pleasing one in which the blotches on the sepals and petals, were of a distinctly rosy shade.

Odontoglossum × Coradinei was flowering in force, being represented by six different plants, no two being alike. One plant bore two spikes, each with fourteen flowers. Several good forms of O. × Andersonianum were out, one bearing four spikes, a brilliantly-coloured O. × Ruckerianum, also of two O. × Wilckeanum, one of which bore a spike of eighteen flowers and another of thirteen on the same bulb. O. × elegans also carried spikes of fourteen and thirteen flowers; and O. gloriosum, a very dense panicle of seven branches. The rare little O. Schillerianum claimed attention by its richly-coloured blooms, while various plants of O. triumphans, Pescatorei, cirrhosum added their charming flowers to the general effect. O. luteopurpureum was also well represented, with spikes of fourteen and sixteen flowers from the same bulb, the variety hystrix with nineteen and seventeen, and a good plant of O. l. sceptrum. The rare O. nævium was represented by a fine specimen carrying a dozen spikes, some bearing twelve and thirteen flowers,

besides which were several smaller plants which have been taken from the specimen. Numerous Mexican species were in flower, including the rare O. Kramerianum, O. maculatum, Rossii, citrosmum, cordatum aureum, Cervantesii and varieties roseum and decorum, while O. Schlieperianum was throwing up spikes strongly. O. c. Stevensii had a spike of eleven flowers just expanding, while some seedling Odontoglossums were observed on a pot of O. Harryanum, which it is hoped may in time reach the flowering stage. Two or three crosses have been made, and it is not quite certain to which they belong.

Of the allied genera several interesting things were in bloom, Cochlioda Nœtzliana, vulcanica and sanguinea, some good Oncidium Marshallianum and concolor, two well-flowered plants of O. cornigerum, a fine Ada aurantiaca with four spikes, and Miltonia Rœzlii, being among the most noteworthy. An excellent specimen of Cymbidium Lowianum was finely in flower, together with Vanda Bensoniæ and a fine Cœlogyne Massangeana.

Among Cattleyas and Lælias many fine things were noticed, as C. Schilleriana with four flowers, two good C. Aclandiæ, one being very large and dark, C. Skinneri alba with a spike of six beautiful flowers, C. intermedia alba, many good C. Mossiæ and Lælia purpurata, the beautiful Lælia tenebrosa Walton Grange variety in sheath, Lælia majalis in bud, the pretty little Leptotes bicolor, and various other interesting things. Of plants not in flower perhaps the most interesting was Cattleya Victoria-Regina, of which we shall have occasion to speak more fully on another page. Here were also a large number of plants of Cattleya labiata in robust health, promising a fine show in the autumn. In the Mexican house Lælia anceps, Gouldiana and a variety of others were doing well, including L. harpophylla, and many L. pumila.

Of Cypripediums only a moderate number are grown of the better known useful kinds, though among them we observed the fine C. × Leeanum giganteum. Dendrobiums, however, are grown in quantity, including about 160 healthy plants of D. Phalænopsis, some of which were in flower. They are grown in moderate heat and thrive splendidly, forming a magnificent spectacle when at their best. Of those in flower may be mentioned good and well-flowered plants of D. Bensoniæ and D. cretaceum. This is not by any means an exhaustive account of the collection, even at this particular season, but only a few notes of some of the more striking things observed during a recent visit, which might easily be extended. Some of the plants had just returned from the Manchester Show, bringing with them the premier prize for the best Miscellaneous Collection, and looked little the worse for their outing. The collection is a valuable and very interesting one, and both Mr. Thompson and his able gardener may be congratulated on their success in its management.

ORCHIDS AT TRENTHAM.

Orchids, like many other things, are cultivated in quantity at Trentham, the seat of the Duke of Sutherland, and during a recent visit some of the houses were quite a picture with a profusion of bloom of various kinds. A large number of Odontoglossums of well-known kinds were brightened up with the brilliant flowers of Masdevallia Harryana and its allies—which are literally grown in hundreds—various Oncidiums, Cattleyas and Lælias, and various other Orchids, producing a very charming effect. Suspended from the roof were several fine plants of Masdevallia rosea, cultivated in shallow pans, and bearing a profusion of flowers, on one of which twenty-eight were counted. Some pans of M. racemosa treated in similar fashion were equally noteworthy, one of the plants bearing as many as fourteen racemes. These had been in perfection for four months, the flowers being borne in succession. M. × Hincksiana was also bearing its pretty buff flowers, and a good form of Odontoglossum tripudians had a spike of ten flowers. A large batch of Dendrobiums were growing with the utmost vigour, including a fine lot of D. Phalænopsis and other popular kinds. Mr. Blair, the gardener, must have his hands pretty full in such an establishment, where Orchids seem to be as well grown as most other things.

ORCHID PORTRAITS.

Angræcum Fournierianum, Kränzl.—*Gard. Chron.*, July 14th, p. 43, fig. 7.

Cattleya × Lord Rothschild.—*Wien Ill. Gart.-Ziet.*, June, pp. 237, 238, fig. 32.

Cochlioda Noetzliana, Rolfe.—*Gartenflora*, xliii., p. 281, t. 1403.

Cypripedium Godefroyæ leucochilum.—*Gard. Chron.*, June 30th, p. 815, fig. 106.

Cypripedium Petri, Rchb. f.—*Wien Ill. Gart.-Zeit.*, June, p. 213, t. 2.

Dendrobium Griffithianum Guiberti.—*Gard. Mag.*, July 21st, pp. 426, 427, with fig.

Dendrobium nobile hackbridgense.—*Gard. Mag.*, June 30th, p. 376, with fig.

Dendrobium suavissimum.—*The Garden*, July 14th, p. 37, with fig.

Disa × langleyensis.—*Gard. Chron.*, July 14th, p. 35, fig. 5.

Houlletia Lansbergii, Lind. and Rchb. f.—*Bot. Mag.*, t. 7362.

Lælio-cattleya × Canhamiana alba.—*Journ. of Hort.*, July 5th, pp. 12, 13, fig. 2.

Lælio-cattleya × Frederick Boyle.—*Gard. Chron.*, June 30th, p. 809, fig. 105.

Lælio-cattleya × Timora.—*Gard. Mag.*, July 14th, p. 405, with fig.

ODONTOGLOSSUM CRISPUM XANTHOTES.—*Journ. of Hort.*, July 12th, pp. 28, 29, fig. 5.

ONCIDIUM PHALÆNOPSIS.—*Journ. of Hort.*, June 28th, p. 515, fig. 83.

SPATHOGLOTTIS GRACILIS, Rolfe.—*Bot. Mag.*, t. 7366.

VANDA KIMBALLIANA.—*Journ. of Hort.*, July 19th, pp. 52, 53, fig. 8.

VANDA SUAVIS VEITCHII.—*Rev. Hort. Belge*, July, p. 145, with plate.

VANDA TERES, Lindl.—*Gartenflora*, xliii., p. 337, t. 1404.

CYPRIPEDIUM BELLATULUM TWO-FLOWERED.

I send you a two-flowered inflorescence of Cypripedium bellatulum which is very interesting. I possess two plants out of a recent importation, and they are exactly similar in shape, colouring, &c. I believe a third plant has produced a two-flowered inflorescence, so am inclined to think that possibly this peculiarity may be permanent. I know not from what district they come, but may say that I believe many good varieties will come out of the importation, as the plants have exceptionally long and broad leaves.

O. O. WRIGLEY.

Bridge Hall, Bury, Lancashire.

[The other flowers were subsequently sent, and bear out Mr. Wrigley's remarks. The flowers are smaller than usual, very dark, and have a very distinctive appearance. It will be interesting to note whether the peculiarity repeats itself at a future flowering.—ED.]

CALENDAR OF OPERATIONS FOR AUGUST.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

IN the Cool House the general management continues the same as advised in the Calendar for June, simply keeping the temperature as low as possible night and day, and the atmosphere heavily charged with moisture; at the same time seeing that the plants are free from insects, a work which involves a considerable amount of time and perseverance at this hot season. This house usually contains, in addition to Odontoglossom crispum, O. Pescatorei, and other allied species, a collection of miscellaneous Orchids, most of which will by now have been looked to and put in condition for growing. Oncidium concolor, having now passed out of bloom, should be repotted if not already done. It is a very pretty Oncidium and well worth cultivating. It does best in shallow hanging pans, in a compost of peat and sphagnum. Odontoglossom ramosissimum, O. Edwardii, O. Uro-Skinneri, and Oncidium macranthum are amongst those kinds now pushing up flower spikes, which should be protected from slugs.

The Cattleya and Intermediate Houses likewise require a continuance of the treatment last recommended. Cattleya Gaskelliana is now in full beauty, and after blooming, the plants may be repotted, if necessary, with good results, or they may be left until early spring and then done. C. Rex is nearly over, and may be repotted and removed from the warm house to the Cattleya House; they are best grown in baskets or pans suspended from the roof. The repotting of C. Skinneri should not be delayed any longer, and should yellow thrip on this and C. Bowringiana be troublesome, by getting down into the axils of the new growth, tobacco powder should be well dusted in, as otherwise they are very difficult to dislodge.

The new growths of C. Trianæ are rapidly advancing, and when the pseudobulbs are matured less water should be given and the plants placed in the most airy part of the house, near a ventilator if possible. The earliest plants of C. Dowiana aurea will soon be in flower, and this species wants careful watching, as decay is liable to take place after the flower spike is cut off. It is caused by moisture lodging at the base of the flower sheath, where the leaf joins the pseudobulb, a very critical place. The consequence is, if the decay be unchecked, that in a few days the leaf will be lost, as the new pseudobulb too quickly becomes rotten, unless the decayed portion is clean cut away. This decay must be prevented, for not only do the plants look unsightly with half a bulb, but they are also greatly weakened. All the autumn and winter-blooming Cattleyas are liable to this, but C. Dowiana aurea, C. labiata, and the hybrids, C. × Hardyana and C. × Massiana, are the most susceptible, and especially if the weather is dull and damp. To avoid it the flower sheath should be entirely pulled out, directly the spike is cut, so that the air has free access and no moisture can lodge there. It is also a good plan to dust the wound with a pinch of powdered charcoal.

In the East Indian or Dendrobium House no change in the treatment is required at present, unless it is that fire heat may almost entirely be dispensed with, though it is best to have a little warmth in the pipes if the weather is unseasonably cold. If any alteration is contemplated with the heating apparatus it should be finished by the end of this month. Continue to watch closely the Dendrobiums, and those that have finished their new pseudobulbs must be taken into a cool but sunny department and water gradually withheld. I refer to such species as flower in spring and require a long rest; but those that flower immediately the growth is finished must not be removed until they have bloomed. D. formosum giganteum is one of the latter and will soon made a good show, D. Phalænopsis Schrœderianum is another, and such kinds must be kept in heat or the flowers will come a poor quality.

Bolleas, Pescatoreas, and Stenias, are curious and interesting Orchids, and a position should be found for them at the coolest end of the East Indian House. If the end be glass so much the better for the plants, for

not only is there more light and air, but the night temperature is much cooler, and the atmosphere densely charged with moisture — keeping naturally damp as it were—which conditions are conducive to the well-being of these lovely Orchids. They may be grown in pots, which must be well drained, and sphagnum moss is the best material for the roots. They must be well shaded, but not be placed too far away from the glass roof, in order that the air may circulate freely round them. A liberal supply of water is needed during summer, but during winter much less will suffice, although they really have no resting season. When the growth is completed the flowers are produced, and then a new growth appears from the base, when the first sphagnum should be supplied to the roots.

The inmates of the Mexican House will now be growing apace, and must have every encouragement. When air is reduced in the afternoon the plants may be well syringed overhead, thus preventing the sticking which is apt to occur, for the young growth and flower spike of the Mexican Lælias become so gummed together that the latter often go off. It is also a good plan during the hot days to water the plants in this house at night.

As the power of the sun declines, less shading will be required on all the houses. Let the roller-blinds down later in the morning and remove the same earlier in the afternoon, while the ends, sidelights, or any portion of the roof which has been permanently shaded with summer cloud, or whitening, should have a part washed away, so that the plants may not be in too much darkness.

Rearing Orchids from seed is a delicate operation. Any seeds that germinate should be carefully transferred to the tiny pots (one inch) directly they are large enough, which is when they have made the first small leaf; if left longer in the seed-pan they are liable to disappear, while, on the other hand, if removed and placed on new sweet compost, a fresh impetus seems to be given to the little plants, and if carefully watered they will soon push out roots and become firmly established. When the seed is ripe it should be shaken on the surface of a plant where the compost is in a good state of preservation, and not too much growing sphagnum moss, or it is soon choked. If it means to grow it will show signs of doing so in a short time, but if there are no signs within six months it may generally be considered as useless. I have had the best results from seed sown on pans and baskets suspended near the roof glass ; rarely indeed have the seeds germinated when sown on pots standing on the side stages. Of course the raising of new hybrids is very interesting and exciting, but to be thoroughly successful is a work demanding a good deal of time and careful watching. It is an easy matter to fertilise and produce the large seed pods, but it draws greatly from the sources of the plant, and the best and most valuable varieties to be thus prostrated without some reasonable chance of raising the seed

is by no means advisable, and it is of little use to raise plants from poor varieties. Seedlings, however, do sometimes spring up even under haphazard treatment. As some structures owing to modern improvements are more suitable for the cultivation of the old plants, so are they likewise more suitable for the germination of the seedlings.

An insect attacking the roots of some Orchids, principally Cattleya, and known as Isosoma Orchidearum is now attacking the new growing roots of C. Percivalliana, causing them to become clubbed. It is not really a very dangerous foe, but it is advisable nevertheless to cut off the infested roots in order to prevent their breeding, for it is not desirable to be visited with a large number of these pests.

Catasetums and Mormodes should be removed after blooming to the Mexican House, and there suspended, as the light and air will ripen the growths, without which they are given to deterioration. They are really good serviceable Orchids when well grown, coming in flower as they do at this somewhat dull Orchid season.

"Is Cattleya gigas Sanderiana the free-flowering variety of C. gigas?" This is rather a curious question, and makes one deplore the fact that there are so many names to one species. The question, "What is the difference between C. gigas and its variety Sanderiana?" has frequently been put to me, to which I have invariably replied that the latter is simply an improvement on the former in point of colouring matter, such as is the case as regards C. gigas Burfordiensis, C. gigas Imperialis, and others. They are all first-rate varieties, and no doubt at one time were very rare and costly, but thanks to the extensive importations of late years, the good varieties are now very plentiful, and he who purchases unflowered plants must chance their being good, bad, or indifferent. The idea, however, of C. g. Sanderiana being the free-flowering form may be dismissed. Some are free and some are shy to flower, some of the most prolific are the worst varieties, while the most shy are the best, and sometimes it is quite the reverse. Why it should be the nature of one plant to be shy and another free I cannot explain, but it is so, and is noticeable in many species. The finest variety of Lælia anceps that I have ever seen absolutely refuses to bloom, unless suspended near the glass in full sunshine, while others may flower regularly every year treated as an ordinary intermediate-house Orchid, and the same may be noticed amongst the white forms of Lælia anceps. With Lælia albida, with Lælia autumnalis, in fact, with nearly all the species of Lælia and Cattleya, C. Mendelii not excepted, the same thing occurs. It may also be noticed in other genera. For instance, I have bloomed plants of Vanda teres freely enough when grown in the East Indian House, and given a liberal amount of sun and water, while others have been placed close to the glass, fully exposed to the sun, and everything tried to induce them to flower without avail. Again, some of the Cœlogynes could be mentioned as offenders in

this respect, and it is exceedingly difficult to account for it. Equally so in the matter of malformation in growth and flowers, which another correspondent writes about, "The growths of C. Gaskelliana are curled up and do not grow." In the first place, I would advise him to make quite sure he has not got the Cattleya fly (*see* Calendar for February), and, secondly, I may say that the new growths of Orchids do sometimes come crippled, and from no apparent cause, even under the most favourable cultural conditions, though fortunately the percentage is small. I have at the present time under my care a Cattleya labiata that makes a malformed pseudobulb every year, and this time it is making a bulb and flower sheath without a leaf. Under good treatment the plants in most cases come right in time. The most curious instance of malformation in the flower that I have had to deal with is a Cattleya Mendelii, which produces a flower, or rather part of a flower, every year alike. The flower is simply two large petals, nothing more, though the growth of the plant looks perfect, and is very healthy.

[We have seen numerous plants out of an importation affected in this way, and were told that the majority were alike. Also that they had been collected from some cultivated orange trees—on which presumably the seed had been sown—though we hesitate to accept the inference that the trees were the cause of the deformity.—ED.]

The proper place for an Orchid to push new growth is from the base of the pseudobulb; but supposing a very rare and valuable plant should meet with an accident, or by any means die at its base, while the pseudobulbs above remain green, there is still hope to save it, and it should not be cast away until all life is gone, as sometimes small growths push from the sides, and sometimes from the apex of the pseudobulb. I once remember seeing a plant of Lycaste Skinneri alba make a tiny bulb from the top of an old one, which afterwards grew into a nice plant. A reader has just sent me some old Cattleya pseudobulbs having nice healthy young plants shooting out from the sides, which is another instance of the vitality of an Orchid when many would suppose it dead. Of course these offshoots are very small, and a long time may elapse before they make a strong plant, but a little of a rare thing is better than losing it altogether.

Ants are very troublesome little insects, and generally select a plant where seed is sown to make their nests. They are very fond, too, of extracting a sweet sticky matter from the tender flower spikes and leaves. Phalænopsis plants are favourite with them, and it is no unusual thing to see leaves with their outside edges of a yellowish sickly appearance, caused by the ants continually at work. I have tried various means for their extermination, including poisoning and trapping, but without any very decided success. I now have recourse to "Killmright insecticide," and mix up a solution of about half a pint to four gallons of water, and with it syringe the stages and other tracks once a day. They soon tire of travelling over this,

and seek other places. If the plants are suspended, ants may be prevented from getting on them by smearing a little grease on the suspending wire.

CONTINENTAL NOTES.

By Ch. de Bosschere.

On the occasion of the second International Horticultural Exhibition at Antwerp on July 1st, the Belgian horticulturists organised a grand fête in honour of their Majesties the King and Queen, and it goes without saying that Orchids were largely used. At the outset we must mention an innovation introduced by M. Ch. Vuylsteke, of Loochristy, namely, to garnish with Orchid flowers a parterre twenty-five metres square. The ground was formed of small palms, asparagus, and maiden-hair ferns, the result being a great success. An immense group of foliage plants was also arranged in the amphitheatre, being brightened up by the beautiful Orchids of Messrs D. and F. Massange de Louvrex, A. A. Peeters, Fl. Pauwels, A. Van Imschoot, Jules Hye, A. Janssens, L. Vincent, J. du Trieu de Terdonck, Ch. Vulysteke, the effect being very striking, and a great source of attraction to the public.

Among the most remarkable Orchids may be mentioned Cypripedium × Leyssenianum of M. Jules Hye, which obtained a First-class Certificate in London; C. × Baron Ed. Osy, whose lower sepal is twice as broad as the upper one, a character which appears to be constant, as two seedlings have both produced the same character. This was also obtained by M. Jules Hye, and may play an important part in the hybridisation of the future. Some grand Cattleyas and Miltonia vexillaria also came from the same exhibitor. M. Van Imschoot sent one of the darkest forms of Lælia tenebrosa yet seen, and a beautiful Miltonia Rœzlii alba. M. A. A. Peeters exhibited a number of very choice Cattleyas, Odontoglossums, Cypripediums, and other Orchids. Cattleya Schilleriana, Odontoglossum hastilabium, and Lycaste Deppei, with a number of the usual showy Orchids came from M. F. Massange de Louvrex, while Odontoglossum pardinum, nævium, and other superb forms came from his brother, M. D. Massange. M. L. Linden sent three very tastefully arranged vases of cut Orchids, M. J. du Trieu de Terdonck a charming bouquet. In the floral decorations Orchids were very largely used, and with great success.

Many beautiful Orchids are flowering in the Royal collection at Lacken, under the intelligent direction of M. H. Knight, among which may be mentioned the rare Ansellia congoensis, Lycaste aromatica, Oncidium pulvinatum, Selenipedium caudatam, with fifteen flowers, Epidendrum vitellinum, various Cattleyas, and other showy Orchids.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Victoria Street, Westminster, on June 24th, many very interesting Orchids were staged, though the exhibits were less numerous than usual.

S. Courtauld, Esq., Bocking Place, Braintree (gr. Mr. A. Wright), contributed a choice little group, three of the plants each receiving a Cultural Commendation. These were Masdevallia rosea, a beautiful specimen bearing between seventy and eighty flowers; Cœlogyne Sanderiana, with two fine spikes of flowers and three more in bud; and Nanodes Medusæ, a vigorous and well-flowered plant. Masdevallia × Kimballiana, a pretty orange-flowered hybrid, received an Award of Merit, while Botanical Certificates were awarded to three others, namely, the pretty little Cœlogyne odoratissima, Masdevallia cucullata, and Scaphosepalum gibberosum. The quaint little Masdevallia O'Brieniana was also included in the group.

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), sent a magnificent spike of the pure white Miltonia vexillaria, Daisy Haywood, which received a Cultural Commendation, and a very fine spike of the typical form.

Captain T. C. Hincks, Terrace House, Richmond, Yorks (gr. Mr. Rushton), sent Masdevallia × Cassiope, a very pretty hybrid from M. triangularis ♀ and M. Harryana ♂, with flowers of a terra-cotta shade, which received an Award of Merit.

M. Jules Hye-Leysen, Coupure, Gand, received a First-class Certificate for Cypripedium × Leysenianum, a handsome hybrid derived from C. barbatum Crossii ♀ and C. bellatulum ♂, a light-coloured form, beautifully flushed with rose colour and spotted with rosy purple.

H. T. Pitt, Esq., Rosslyn, Stamford Hill, exhibited an excellent group, to which a Bronze Banksian Medal was awarded. Lælia tenebrosa Pittiana, an unusually light form, received an Award of Merit. Among other plants may be noted a very fine Oncidium phymatochilum with much-branched spike, Cattleya Mossiæ alba, Angræcums Scottianum and falcatum, Epidendrum vitellinum, Oncidium Kramerianum, Odontoglossum cordatum, Cypripedium superbiens, Curtisii, &c.

Pantia Ralli, Esq., Ashstead Park, Epsom (gr. Mr. Hunt), received an Award of Merit for a fine spike of Phaius Sanderianus Ralli's variety, with yellow sepals and petals and a white lip. Two spikes of the typical form were also shown.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited a splendid specimen of Lælia tenebrosa bearing twenty-eight flowers on seven spikes, to which a Cultural Commendation was deservedly

awarded. He also sent L. purpurata gigantea, with unusually large lip, Cattleya Gaskelliana, Cypripedium Curtisii superbum, and C. Lawrenceanum.

E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, exhibited a good form of Lælio-cattleya × Schilleriana.

J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex (gr. Mr. Davis), showed Cattleya Mossiæ Reineckiana and cut spikes of C. Mendelii, C. Gaskelliana, and Lælio-cattleya × elegans Turneri.

The Executors of the late G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire (gr. Mr. Holmes), showed a fine variety of Dendrobium crystallianum under the name of D. Statterianum.

S. G. Lutwyche, Esq., Eden Park, Beckenham, showed Promenæa stapelioides and Cypripedium Godefroyæ leucochilum.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent the pretty Aganisia ionoptera, Maxillaria Turneri, and Grammatophyllum Rumphianum.

W. C. Parkes, Esq., Llanberis, Tooting, showed the richly-coloured Phaius bicolor Oweniæ.

Messrs. Rothschild, Gunnersbury Park, Acton (gr. Mr. Reynolds), sent a fine form of Cattleya Warneri, with five flowers on two spikes.

E. Walker, Esq., Leek, sent the very rare and pretty Odontoglossum Galeottianum, a Mexican species which sometimes comes with O. Cervantesii, and has been incorrectly considered as a natural hybrid with it.

A. W. Witt, Esq., Broomfield Road, Maida Vale, sent a very prettily spotted form of Cypripedium bellatulum.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, exhibited Lælio-cattleya × Canhamiana alba, a very handsome hybrid with pure white sepals and petals, which received a First-class Certificate, also Selenipedium × Schrœderæ, Disa × Veitchii, and D. × langleyensis.

Messrs. Hugh Low and Co., Clapton Nursery, staged an effective group, to which a Silver Banksian Medal was awarded. It contained various Cypripediums, Cattleya Leopoldi, C. Warscewiczii, and others, Miltonia Rœzlii, Oncidium macranthum, Masdevallia coriacea, M. Harryana, Saccolabium Blumei, and other good things.

Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford, also received a Silver Banksian Medal for a fine group containing many good Lælia tenebrosa and Oncidium macranthum, also O. crispum, Cattleya granulosa, a fine Vanda cœrulea, Lælio-cattleya × Canhamiæ, and others.

Messrs. F. Sander and Co., St. Albans, contributed a very interesting group, including the new Angræcum Fournierianum and the beautiful Pescatorea Klabochorum excellens, each of which received an Award of Merit, Aërides Lawrenceanum, Cattleya granulosa aurea, C. Warscewiczii purpurea, Grammatophyllum Fenzlianum, Lælio-cattleya × Arnoldiana, &c.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., sent a very pretty form of Cattleya Gaskelliana called Miss Maude Dowdney, with white sepals and petals.

Messrs. Collins and Collins, Cumberland Park Nurseries, Willesden, staged an effective group, containing several good Epidendrum memorale, Odontoglossum citrosmum, Cypripediums, &c.

Mr. W. Cutbush, Highgate Nurseries, London, staged a group of about forty well-flowered plants of Epidendrum vitellinum.

Mr. H. A. Tracy, Amyand Park Road, Twickenham, showed a white form of Miltonia vexillaria.

At the meeting held on July 10th, a number of interesting Orchids were staged, several of which received awards.

Messrs. James Veitch and Sons, Chelsea, showed Lælio-cattleya × Timora, a fine hybrid derived from Lælia pumila Dayana ♀ and Cattleya Lueddemanniana ♂, which received a First-class Certificate, Thunia × Veitchiana superba, to which an Award of Merit was given, Disa × Diores (D. × Veitchii × grandiflora), and Phalænopsis × Artemis.

Messrs. Hugh Low and Co., Clapton, exhibited the very interesting new Vanda Roeblingiana, Rolfe, with two large curiously fringed lobes at the apex of the lip, a Botanical Certificate being awarded. Cypripedium × javanico-superbiens and C. × Alice were also shown.

Messrs. W. L. Lewis and Co., Southgate, received a Silver Banksian Medal for an effective group, containing various good Cattleya Gaskelliana, C. Eldorado, Bifrenaria vitellina, B. Harrisoniæ, Zygopetalum Gautieri, Oncidium curtum, Cypripedium × Patersonii (C. Lowii ♀ × C. Lawrenceanum ♂), Lælio-cattleya × amanda, and other showy things.

Messrs. F. Sander and Co., St. Albans, staged a group of good things, including a beautiful plant of Platyclinis filiformis, with a hundred and twenty of its graceful drooping racemes, to which a Cultural Commendation was awarded, the rare Saccolabium Hendersonianum, Renanthera matutina, Dendrobium formosum giganteum, Sobralia xantholeuca, Cattleya Batalinii, C. Gaskelliana rubra, and C. G. virginalis, Cypripediums, &c.

The Right Hon. J. Chamberlain, M.P., Highbury, Moor Green, Birmingham (gr. Mr. H. A. Burberry), showed cut spikes of the fine Miltonia vexillaria highburyensis, with a dark maroon blotch and lines at the base of the lip.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), staged Odontoglossum Harryanum and a strong O. Pescatorei with much-branched spike, also a good white Cattleya Gaskelliana.

Dr. F. Pritchard Davies, Barming Heath, Maidstone, showed a fine form of Odontoglossum cristatellum.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), showed a fine Cattleya Warscewiczii.

C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr. Mr. Milburn), sent a fine Cattleya Rex with four-flowered spike.

The Director, Royal Gardens, Kew, sent cut spikes of the beautiful Disa × kewensis, D. × Premier, and D. × langleyensis, for which he received a Vote of Thanks.

C. Ingram, Esq., Elstead House, Godalming, showed a striped Cattleya Mossiæ, Lælio-cattleya × Ingramii, and Cypripedium T. W. Bond, the latter a fine hybrid derived from C. × Swanianum ♀ and C. hirsutissimum ♂.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), received a Botanical Certificate for the pretty white and green Ornithocephalus grandiflorus.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent a group of fine interesting Masdevallias, M. corniculata, demissa, Gaskelliana, muscosa, and trichæte.

F. W. Moore, Esq., Glasnevin, sent a pretty form of Phaius Humblotii.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a fine spike of the richly-spotted Odontoglossum crispum Ballantinei.

J. W. Temple, Esq., Leyswood, Groombridge (gr. Mr. Bristowe), showed the rare Fernandezia robusta, Cattleya granulosa var. Buyssoniana, and two fine forms of C. Warscewiczii, one very dark, the other light coloured.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. Stevens), showed a beautifully blotched variety of Odontoglossum crispum, and Cattleya Gaskelliana var. Nellie, a white form with small purple spot on front of lip, which received an Award of Merit.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), showed the fine Dendrobium Leeanum atropurpureum, Cypripedium × Wiganianum, and C. × macropterum.

Reginald Young, Esq., Sefton Park, Liverpool, sent flowers of Cattleya granulosa and a spike of a very richly coloured C. Warscewiczii.

CORRESPONDENCE, &c.

C. E.-F., Midhurst.—Brassia verrucosa, Saccolabium curvifolium, Cattleya Gaskelliana. The flowers of Cypripedium bellatulum are very beautiful, and show how variable this species is in colour and markings.

G.R., Arddarroch.—Odontoglossum cristatellum.

Dr. G. M., Lincoln.—1. Lælia crispa ; 2 and 3. forms of Lælio-cattleya × Schilleriana.

W. B. L., Birmingham.—Warscewiczella Wendlandi.

E. A., Wilmslow.—Catasetum macrocarpum.

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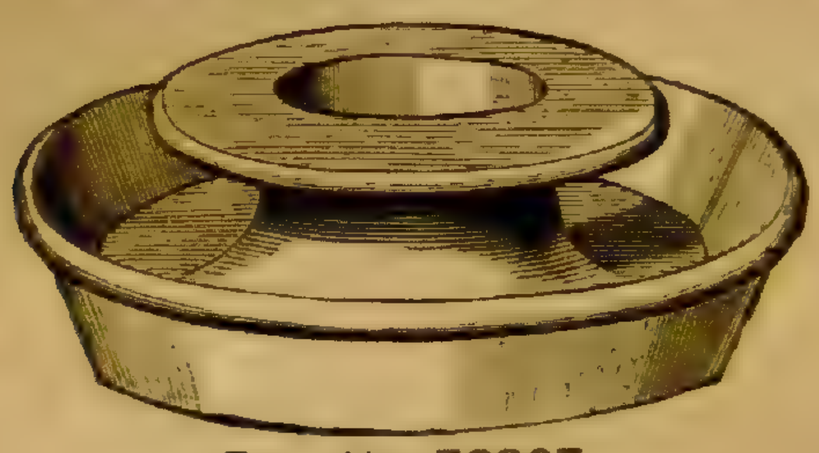

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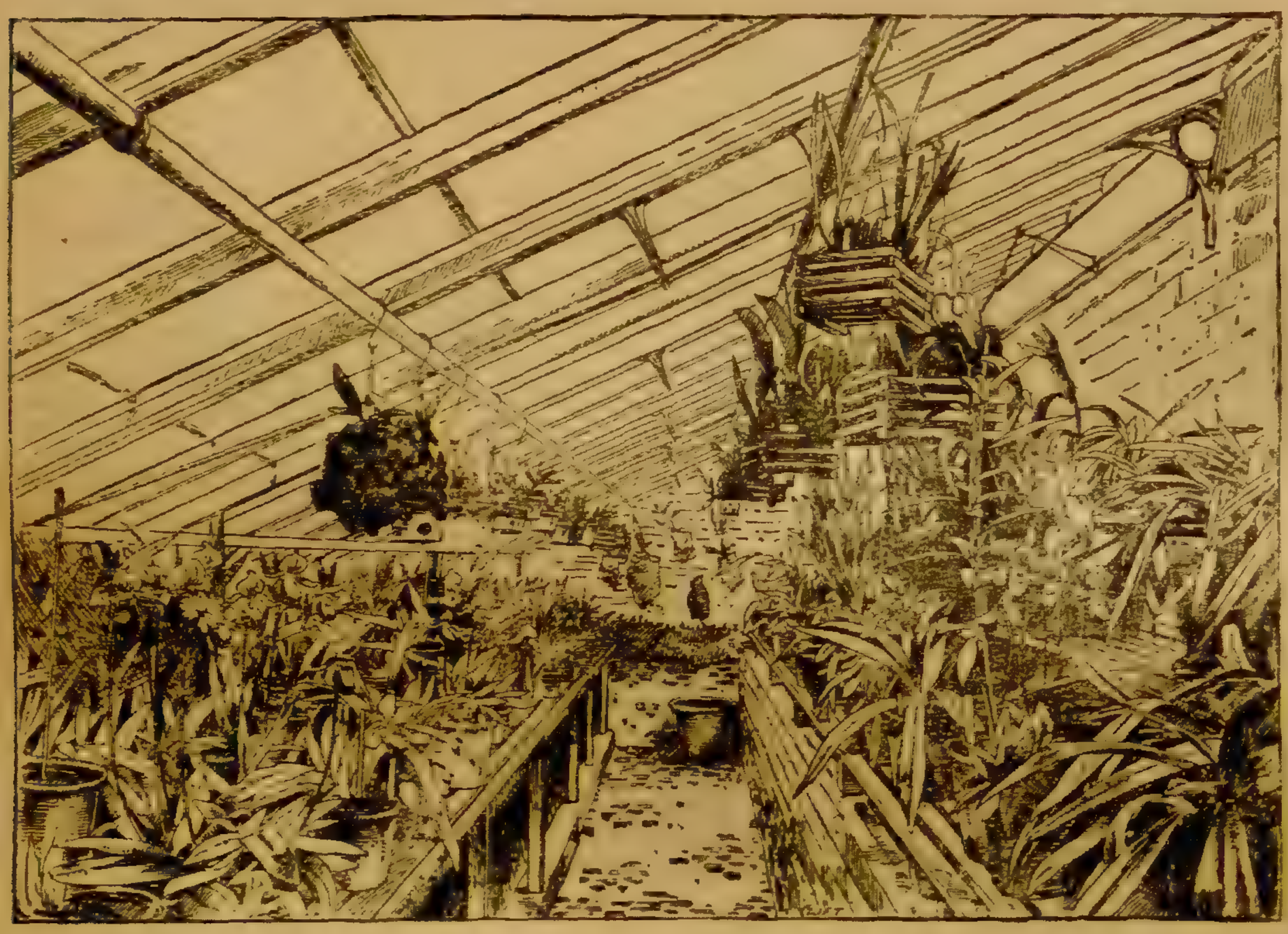

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VOL. II.] SEPTEMBER, 1894. [No. 21.

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An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	257
Obituary	258
An Orchid Sale	259
The Selly Hall Collection	261
Cypripedium Charlesworthii	264
Dies Orchidianæ	265
Cypripedium × Edwardii	266
Notice of Book	267
Cochlioda Nœtzliana	268
Nomenclature of Cypripedium ...	269
Zygopetalum Lindeniæ	270
Lælio-cattleya × elegans at Streatham	271
Trigonidium latifolium	271
Cattleya Rex	272
Gongora portentosa	272
Dendrobium × Nestor (Fig. 28) ...	273
Sobralia sessilis and S. decora... ...	274
Sobralia xantholeuca, Wigan's variety	275
The Hybridist	275
Cypripedium × excellens	275
Cattleya × Atlanta	275
Cypripedium × Denisianum ...	276
Lælio-cattleya × Ingrami	276
Neuwiedia Griffithii	276
Culture of Bolleas and Pescatoreas ...	277
Cycnoches Loddigesii ♀	277
Nursery Notes	278
Oncidium ampliatum majus	278
Orchid Portraits	278
Calendar of Operations for September	279
Polypodium fibre *versus* peat... ...	283
Orchids at the Royal Horticultural Society	284
Correspondence, &c.	288

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THE ORCHID REVIEW.

VOL. II.] *SEPTEMBER*, 1894. [NO. 21.

NOTES.

THERE will be only one meeting of the Royal Horticultural Society at the Drill Hall, James Street, Westminster, during September, namely, on the 11th of the month, when the Orchid Committee will meet at the usual hour of 12 o'clock noon.

The feature of the meeting on August 14th was the beautiful group of sixty plants in flower of Cypripedium Charlesworthii, exhibited by Messrs. Hugh Low and Co., of Clapton, which are noted on another page.

A sale is announced to take place on September 7th, by Messrs. Protheroe and Morris, of one hundred lots of Orchids from the collection of S. G. Lutwyche, Esq., Eden Park, Beckenham. Among them we note the fine Dendrobium × Lutwycheanum, described at p. 202 of our July number, the rare D. × Rœblingianum, described at p. 211 of our last volume, Cypripedium Charlesworthii in flower, &c.

The beautiful Cattleya labiata elegans from the collection of the late T. R. Watt, Esq., of Chislehurst, which has more than once been mentioned in these columns, was purchased at the sale by E. Ashworth, Esq., Harefield Hall, Wilmslow, and is now included in his rich collection.

Cycnoches pentadactylon is now flowering very profusely in the collection of W. W. Mann, Esq., Ravenswood, Bexley, and bears both male and female flowers, their different appearance giving the plant a very striking appearance. Our readers will remember the remarkable specimen figured at p. 73 of our last volume. Mr. Simon, the gardener, is evidently an expert in the culture of this remarkable Orchid.

Hybrids between Cypripedium and Selenipedium have more than once been noted in our pages, notably at p. 66 of the present volume. T. W. Swinburne, Esq., Corndean Hall, Winchcombe, Cheltenham, writes that he had a flower each of Cypripedium Spicerianum magnificum and Selenipedium Schlimii, which he crossed both ways. The Selenipedium pod ripened about seven months ago, and now good strong seedlings are showing on the pot, but the Cypripedium pod, the reverse cross, is not yet ripe.

Referring to the note on p. 247 of Cypripedium bellatulum with two-flowered scapes, Mr. Swinburne also states that he has a very fine variety which has borne two flowers on each scape for the last two years.

Professor Penzig, of Genoa, has recently published in the *Mémoires de la Société Nationale des Sciences Naturelles de Cherbourg* an article on "Monstrosities in Orchids," in which he reviews the principal structural modifications that occur.

OBITUARY.

WILLIAM HUGH GOWER.—We regret to have to announce the death, at Tooting, on July 30th, of Mr. William Hugh Gower, in his 59th year. Mr. Gower has been ailing for several months, in fact he never really recovered from an attack of influenza which he had some time ago. Mr. Gower was formerly with Messrs. Jackson and Son, of Kingston, and afterwards with Messrs. Rollisson, B. S. Williams, and at Kew. Of late years he has been well known in connection with the horticultural press, more especially in connection with Orchids, about which he contributed largely to *The Garden*, while since Thomas Moore's death he has assisted in the preparation of the *Orchid Album*. His one contribution to our columns was respecting Lycaste Skinneri alba, at p. 229 of our last volume, though we have a letter from him expressing his appreciation of the work being done by the ORCHID REVIEW. He only survived his father a few months.

AUGUSTE LINDEN.—We also regret to hear of the death of M. Auguste Linden, son of M. J. Linden, of Brussels, which took place at Luxembourg on August 10th, at the age of 44 years. For ten years he served as an officer in the Belgian army, which he left in 1885, and went on a collecting expedition to the islands of the Indian Ocean, during which he sent home Aërides Augustianum, Spathoglottis Augustorum, Vanda Lindeni, Dendrobium stratiotes, D. strebloceras, D. inauditum, and other Orchids and ornamental plants. After a rest of some months in Europe he went to the Congo, whence he obtained Ansellia congoensis and the remarkable Lissochilus giganteus. Some time after his return home he met with a serious accident, which necessitated the amputation of the left arm, and paralysed the other, leaving him quite an invalid for the last six years of his life.

AN ORCHID SALE.

SEVERAL correspondents have expressed a wish that we should give an occasional note of the Orchid Sales and the prices obtained, which they think would be useful as a guide to those living away from London. The following are notes of one which took place at Messrs. Protheroe and Morris's Rooms, on August 10th, when an importation of about seven hundred plants of Cattleya Dowiana aurea, and a small batch of Miltonia Roezlii, were offered by Messrs W. L. Lewis and Co., of Southgate, batches of Lælia tenebrosa, Sophronitis grandiflora, Odontoglossum crispum, Scuticaria Steelii, and other things, by Messrs. F. Horsman and Co., of Colchester, together with the usual additions of miscellaneous Orchids in flower.

The sale opened with an offer of twenty-five lots of Miltonia Roezlii, the best price obtained being ten shillings for a plant described as a "fine mass." Other similar pieces fetched from five to eight shillings, also lots of two and three smaller plants, one of the latter going for four shillings.

The great attraction was naturally the fine importation of the beautiful Cattleya Dowiana aurea, which, unfortunately, is generally supposed to be now becoming rare in its native habitat. This of itself would attract buyers, but another circumstance tending to increase the competition was the possibility of unexpectedly obtaining the rare natural hybrid, Cattleya × Hardyana and its varieties, which occasionally turn up in importations from the district where C. Dowiana aurea and C. Warscewiczii grow together. At all events, several buyers secured a good number of plants, and the fact just mentioned may be put down as one of the determining causes. The best price obtained was six and a half guineas for an "extraordinary fine piece, with seventeen bulbs and ten leaves," F. Hardy, Esq., being the purchaser. One realised five guineas, at which price another fine plant was bought in. Four or five others fetched four and a half guineas, one £3 5s., one three guineas, three or four others £3, while over thirty ranged between £2 and £3. The more ordinary sizes, and in a good many cases two and three small plants in one lot, fetched various prices down to twelve shillings, and over a hundred lots failed to reach this figure, which is believed to have been the reserve price. A fine established plant bearing a raceme of three flowers, which was exhibited during the sale, was knocked down for £4. The prices decidedly declined towards the close of the day, but, taken altogether, it was generally considered that the sale was a very good one. Many well-known amateurs were among the buyers.

Lælia tenebrosa went cheap. About twenty-four lots of four plants each were offered, and some seven of these fetched from seven to fifteen shillings each, the remainder being grouped twelve plants together and realised from fifteen to seventeen shillings per lot. Three lots of twenty pieces were

knocked down at eight shillings each. A fine mass of Lælia crispa with over forty bulbs went for £2, and a few lots of four plants ranged from seven to thirteen shillings each.

Sophronitis grandiflora was offered in good condition. "Grand pieces" went for six and seven shillings, and in lots of three each for eighteen to twenty shillings. And in one case over twenty lots of six pieces each were lumped together and only fetched £2 10s.

A few Oncidium Forbesii, in "grand masses," ranged from five to seven shillings each and in two's of smaller size fetched about the same. Oncidium concolor went a trifle cheaper, only reaching six shillings on about one occasion. Lots of six pieces fetched about four shillings each, and a few lots grouped together averaged rather less. A small parcel of Scuticaria Steelii found purchasers at from four to six shillings per lot, while a dozen small pieces grouped together realised nine shillings.

Odontoglossum crispum from Pacho, of which over a hundred lots were offered, would hardly sell. One lot of four pieces sold for three shillings, but when grouped six lots together fetched only seven to ten shillings, and ten together eleven to thirteen shillings, ultimately falling to about five shillings for similar quantities. One would think that the work of exterminating this beautiful species might now cease for a time.

Miscellaneous Orchids, mostly in flower, are now a regular feature of these sales, and on this occasion amounted to nearly one hundred and fifty lots. Among those not in flower may be noted two Lycaste Skinneri alba, which went for two and three guineas, Cœlogyne cristata alba twenty-four shillings, Dendrobium nobile Cooksoni two and a half guineas, Selenipedium × grande £1, and a few others at prices ranging down to five shillings. Cattleya Trianæ alba fetched seven guineas, but a dozen plants of the type ranged from five to six shillings each, or even less, while three plants of Cattleya Dowiana aurea in sheath ranged from seventeen to twenty-two shillings each. And, by way of keeping insects in check, a case of twenty-five green tree-frogs was sold for fourteen shillings.

Orchids in flower made quite a show. A plant of Cypripedium × vexillarium fetched two guineas, C. tonsum ten shillings, several C. × œnanthum four to ten shillings each; indeed, many Cypripediums of various kinds ranged from about five to nineteen shillings, and one as low as three shillings. A good number of Dendrobium Phalænopsis ranged from five to ten shillings each, and a batch of four fetched thirteen shillings. D. nobile album realised £2 10s., various D. formosum from six to fifteen shillings, and D. chrysanthum seven shillings. Two Cattleya Leopoldi fetched twenty and twenty-one shillings each, three C. Warscewiczii ranged from eight to twenty-one shillings, and several C. Gaskelliana from seven to twenty shillings. A fine Vanda suavis, four and a half feet high, with two racemes, fetched two guineas, and a small V. tricolor seven shillings, this being also

the price of Cœlogyne Massangeana. Miltonia candida fetched eight and eleven shillings, M. vexillaria six and thirteen shillings, and M. Clowesii seven shillings. A fine specimen of Lælio-cattleya × Schilleriana, with two spikes, went for nine and a half guineas, Lælia crispa for ten shillings, Stanhopea Wardii for six shillings, and Epidendrum raniferum for £1. Odontoglossum crispum virginale realised ten shillings, Oncidium Papilio six shillings, and O. macranthum twenty shillings, while two good plants called O. Forbesii, which looked like hybrids, were sold for six and ten shillings. Several Odontoglossum grande in bud fetched from eight to ten shillings, O. Schlieperianum five shillings, and two or three Trichopilia Galeottiana three to six shillings each.

It is useless to prolong the list, as the preceding indicates pretty clearly the range of prices, and also shows that rare things are sought after. How far it serves as a guide to average prices, and how it compares with nurserymen's lists, is perhaps a matter of opinion, but it must be borne in mind that at these sales prices fluctuate considerably, owing to causes which will readily be understood.

THE SELLY HILL COLLECTION.

A FINE and very interesting collection of Orchids is the one situated at The Uplands, Selly Hill, Birmingham, the residence of one of our most enthusiastic Orchidists. Here are several well-constructed and conveniently arranged houses, containing several thousand plants in the most robust health, which we had the pleasure of inspecting a short time ago. Mr. Winn spends much time among his pets, in fact, he described them as his chief pleasure, and with the assistance of his able gardener, Mr. Oliver, has brought the collection to a condition of excellence which is in the highest degree satisfactory.

Hybridisation is carried on extensively and in a systematic fashion. At first many difficulties were encountered, but they were gradually overcome, and now Mr. Winn is reaping the reward of his perseverance. Over two thousand seedlings of various kinds are in existence, to say nothing of those germinating and not yet potted up—in fact, one block alone contains over twelve hundred nice little plants, which will probably yield some surprises in the future.

Several good things have already flowered. Our readers will remember the fine Cymbidium × Winnianum (C. giganteum ♀ × C. eburneum ♂) which was figured at p. 361 of our last volume. Then there is the handsome Dendrobium × Nestor, whose portrait appears on a later page; Cypripedium × Edith Winn (C. Stonei ♀ × C. purpuratum ♂), of which only a single seedling was raised; C. × Cleopatra (C. Stonei ♀ × C. × œnanthum superbum ♂); C. × The Duke (C. Stonei ♀ × C. barbatum

grandiflorum ♂); C. × Ensign (C. × Harrisianum ♀ × C. barbatum ♂); C. × Psyche, a hybrid between C. bellatulum and C. niveum (which was thus not correctly recorded at p. 223 of our last volume); and one or two others which do not seem to have been recorded. Then there are some seedling Calanthes, and some of the earlier hybrids which have also been raised here, among them Thunia × Veitchiana and Cypripedium × Calypso, a particularly fine form.

Cypripedium Chamberlainianum has been utilised for hybridisation, and Mr. Winn has seedlings between it and C. Stonei, C. superbiens, and C. × Leeanum. A curious circumstance in connection with the last-named cross deserves to be placed on record. A flower of C. Chamberlainianum was fertilised, and the pod gradually swelled and at length matured, but all the time the spike continued to flower, and, in fact, the seedlings were up before the last flower was out. This fact illustrates a peculiarity of the species, namely, its habit of flowering for months in succession, by the gradual elongation of the spike. It succeeds admirably here, and the plants are very healthy, though grown in less heat than is often given.

Here are some healthy seedlings raised from Cypripedium × Harrisianum superbum crossed with C. Sanderianum, all of which have veined leaves, mostly light coloured, though one is very dark. Others raised from C. Rothschildianum crossed with C. niveum will probably prove good when they reach the flowering stage. Another promising hybrid, of which there are fourteen good plants, is C. niveum crossed with C. × œnanthum superbum, which we may expect to hear of again. An attempt has been made to get an improved white Selenipedium, after the style of S. × cardinale, by crossing S. × Sedeni candidulum with the pollen of a fine S. Schlimii albiflorum, and a good healthy capsule has developed.

Turning to Cattleyas, we find a variety of interesting crosses, and among them one from C. Dowiana aurea crossed with C. Warscewiczii, an experiment made for the express purpose of obtaining the splendid C. × Hardyana, as we advised in these columns some time ago. Seedlings from C. Bowringiana crossed with the old C. labiata are promising, as both are autumn bloomers, free growers, and in every way likely to unite well together.

Seedlings from Cymbidium giganteum crossed with C. Mastersii have reached a good size, but have not yet flowered. Masdevallia tovarensis crossed with M. bella yielded seedlings which are now six years old, and should soon flower. They are specially interesting, because one parent belongs to the Saccolabiate group, which does not readily unite with species of other sections.

These are only a few hasty notes, which may serve to give some idea of the work which is being carried on here and the number of choice crosses which have been made. We may, perhaps, be able to supplement them on a future occasion.

Turning now to some of the species observed in flower, we may first note a large number of Cypripedium barbatum Warneri, which is a great favourite with Mr. Winn, and has the character of being always in flower. C. Curtisii was also flowering with remarkable vigour, the various plants being pictures of health. Another plant which was growing and flowering well was C. Volonteanum, which, though so much like C. Hookeræ in the flower, has leaves about twice as thick, so that they two may easily be distinguished by this character. Many plants of C. niveum were in flower, and the fine C. n. grandiflorum in bud. It is said to be double the size of the ordinary form. C. × Godseffianum was also worthy of note among the numerous other forms in flower.

Among Selenipediums we noted a very fine S. caudatum, and its light variety Wallisii; the handsome S. × Schrœderæ, S. × grande atratum, also fine plants of many of the other well-known forms.

Masdevallias are grown in quantity, and the mind naturally reverts to the handsome M. Winnianum, which originated here. Several plants were finely in flower, together with a very dark, almost blackish, form of M. Roezlii, and another with yellow-edged sepals. The forms just mentioned all appeared in the same importation with M. Winnianum, and may be considered as extreme forms of one variable species. The handsome M. Wallisii stupenda was also in bloom, its flowers being unusually large; in fact, all the Masdevallias are well grown, many of the plants being large and strong, and when thus grown it is remarkable how long the same flower spikes will continue to push fresh flowers.

Many handsome Cattleyas and Lælias were in flower, including a very fine C. Mendelii with the front half of the lip very richly coloured and the tip of the petals splashed with a similar tint; the beautiful C. M. Morganiæ; and a handsome form of C. Mossiæ with flaked petals, much like C. M. Hardyana. A splendid form of Lælio-cattleya × Schilleriana was also in bloom.

The handsome Dendrobium × Nestor was bearing a dozen of its richly coloured flowers; an excellent form of D. Dalhousieanum was finely in bloom; a very strong D. Falconeri giganteum, with long pseudobulbs and flowering right to the apex, and many other of the usually grown forms. A curious feature with respect to D. Wardianum album has been observed in this collection. For many years the yellow disc showed no trace of spots, but afterwards a pair of pale or dusky spots appeared, which now reproduce themselves.

A long list of plants in flower might be enumerated, but we have no intention of making a catalogue. An unusual form of Miltonia vexillaria, however, may be mentioned, in which the white lip was prettily spotted with pink.

One thing we noticed in going through the houses is that the tempera-

tures are kept rather below the average, by the admission of plenty of fresh air. The bottom ventilators are constructed of perforated iron, which serves to filter the air, and thus prevent cold draughts, while at the same time they can be opened to any amount, little or great, according to the state of the weather. The syringe is used freely on warm sunny afternoons without any ill effects, and no manure of any kind is used. The plants generally are exceedingly well grown and healthy, and Mr. Winn attributes much of his success to the constant admission of fresh air whenever the outside conditions permit, in conjunction with moderate temperatures and careful attention in the important matters of potting and watering. The collection is one of our oldest ones, though at the same time one of the most interesting, being well to the front in the comparatively modern work of hybridisation, and Mr. Winn may certainly be congratulated on its excellence.

CYPRIPEDIUM CHARLESWORTHII.

When the beautiful Cypripedium Charlesworthii was originally described in our pages, at pp. 303 and 355 of the last volume, it was little suspected that within a year it would be flowering in almost every collection of note, and yet so abundant has it become through the enormous importations which have been made, by three different firms, that this is what has taken place. At the Meeting of the Royal Horticultural Society on August 14th, Messrs. Hugh Low and Co., of Clapton, exhibited a magnificent group of sixty plants in flower, which fully justified all we predicted respecting it, except that it has proved to be a summer-flowerer instead of an autumn one. We are now in a position to judge better of its merits, and next to its undoubted beauty the thing which particularly strikes us is the amount of variability it presents in the colouring of the dorsal sepal. The amount of white marbling varies considerably in different flowers, in two or three of the darkest being almost absent, as in our coloured plate. From this it gradually increased in amount down to the lightest forms, even predominating in two or three instances, where the colour was chiefly confined to the nerves. The depth of the rose colour also varies considerably, in one or two cases being almost of a pale lilac-rose tint, these being chiefly those in which the white predominates. Two or three dark forms were almost identical with our plate. The porcelain white staminode is very remarkable. It is perhaps not less useful flowering in August than two months later, as was the case last season, which probably arose from the check it received by being imported just when it was. Hybridists are now busy with it and a few years hence we may see some surprises. The marvel is that so beautiful a species should not have been discovered before.

DIES ORCHIDIANÆ.

At last we know something about that mysterious plant, Cattleya Rex, which I see is flowering all around us, and I confess I am agreeably surprised to find it as distinct as it is. Nominally, it may be said to have appeared in 1890, but we are assured that it was discovered by M. J. Linden half a century earlier, and that Wallis met with it thirty years later, but did not succeed in sending living plants to Europe. Two collectors also have at different times been sent for it, but without success. And no wonder, when we consider how it grows in the most inaccessible locality, and that "not only the plants, but the collectors have to be carried for several days on the backs of Indians," over precipitous rocks, &c., the result being better imagined than described. However, now they have got used to this sort of thing—I mean the collectors, not the plants—things are looking up, and as another firm has also imported it, the species is becoming more common with us. I have not yet discovered the ancient records—*Orchidaceæ Lindenianæ* is silent, except about Cattleya Mossiæ—and of course there will be records, unless the secret was remarkably well kept.

However, now we have it, and a beautiful Cattleya it is, if not exactly what we expected it to be. And it flowers at a time which makes it particularly useful, when the early-flowering Cattleyas are about over. There is a distinct shade of yellow or creamy buff in most of the flowers which makes a pleasing variety, and the lip is very handsome, though not veined as strongly as was anticipated. But I question if it has yet reached its full development, for among the many plants seen I have yet to find one with a raceme of six flowers, a lip two and a half inches broad, and an expanse of six and a half inches from tip to tip of the petals as in one of the plates which has been issued. The presumption of course was that a plant known half a century ago must have appeared before in some shape or form, but of this we have no evidence. Some of these days we may learn something more about its habitat.

A contemporary, speaking about Phaius Sanderianus, calls attention to the nomenclature question, and "wishes for some very decided system of nomenclature which would determine the doubtful titles now occurring, not only in this genus, but throughout the whole order." The trouble is that some authorities consider this plant a variety of P. Blumei, which itself has been reduced to a variety of P. grandifolius, and yet in the records of the R. H. S. awards P. Sanderianus is stated to be a species. All this is naturally very confusing. And now for the remedy. "It appears to be quite time that another Orchid Conference should be held with a view to comparing species and varieties, for the purpose of reducing the chaos of

confusing names to a rational and scientific nomenclature by those who are acknowledged to be the standard authorities on this subject." But would they do it? If so I welcome the proposal, though all the same I have my doubts on the subject. We have already had a Nomenclature Committee, who laid down certain rules on the subject, and the next thing necessary seems to be a Conference to decide how to deal with those who don't carry them out. I make no charge for the suggestion.

As to the larger question, I should think a single genus would serve for an experiment. Cattleya, for instance, would serve for any ordinary Conference as long as they would care to sit, and the advantage of commencing with this one would be that, try how they would, it would be impossible to make the confusion worse than it already is. Species, varieties, sub-varieties, sections, and one hardly knows what besides, are mixed up in the utmost confusion, and the Conference which succeeds in putting them on an intelligible basis will deserve the thanks of all Orchidists.

One matter more and I have done. At page 205 I called attention to a list of so-called new species, varieties, and hybrids, whose claim to the title must be traced back for a varying and sometimes considerable number of years. I now see Galeandra lagoensis solemnly announced as "*Nov. Sp.*," which looks well, no doubt, until you discover that it was described in 1881. And Cattleya × Hardyana laversinensis is not a new variety, in spite of the statement to the contrary. No wonder our records get mixed at times.

ARGUS.

CYPRIPEDIUM × EDWARDII.

A flower of this beautiful hybrid has been sent by R. H. Measures, Esq., The Woodlands, Streatham, which shows that it has decidedly improved since it was originally described and figured in our pages (vol. i. p. 23). The dorsal sepal is barely under two and a quarter inches broad, and shows the influence of the pollen parent, C. Fairieanum, in being closely veined and somewhat reticulated with deep purple. The lip and staminode are much like those of C. superbiens, the other parent, while the petals are fairly intermediate in character, being beautifully spotted along the nerves with purple-brown on a light ground, the margin being suffused with purple, undulate, and beautifully ciliate. This distinct and beautiful hybrid was raised in the collection of H. Graves, Esq., Orange, New Jersey, U.S.A., by Mr. R. M. Grey, and its merits may be inferred from the fact that last year it received an Award of Merit from the Royal Horticultural Society.

NOTICE OF BOOK.

Le Livres des Orchidées. Par le Comte O. de Kerchove de Denterghem, Président de la Société Royal d'Agriculture et de Botanique, a Gand. Large 8vo., pp. 601, with 310 woodcuts and 31 chromolithographs. Gand, Ad. Hoste, 47, Rue des Champs. Paris, G. Masson, 120, Boulevard St. Germain.

We have recently had occasion to review several cultural works on Orchids, and now we have before us one written from a more general standpoint, from the pen of Comte Oswald de Kerchove, author of a well-known work on Palms. The author's object, as set forth in the preface, is to give to lovers of these beautiful plants a summary of the present state of our knowledge respecting them. The result is a very interesting volume of six hundred pages, in which a large number of facts are brought together in compact form, and on the whole very well arranged, though its value is largely detracted from by an unnecessarily large number of errors. The work commences with a short general Introduction, in which various matters, ancient and modern, are discussed, and here we note one or two details which are incorrect. The first exotic Orchids introduced to Europe are said to have been Phaius grandifolius and Cymbidium ensifolium, sent in 1780 by Dr. John Fothergill. But Bletia verecunda flowered nearly half a century before this, while 1788 is recorded as the date of introduction of Phaius grandifolius. Again, Allan Cunningham is said to have introduced and described the first Australian Orchids in 1823, though Dendrobium speciosum was introduced in 1801, by Sir Joseph Banks, while in 1807 no less than six others appeared, all of which facts have recently been pointed out in our columns. Oncidium ensifolium is evidently a slip for O. bifolium. The work is divided into three parts—Structure and Organisation, Utility and Geographical Distribution, and Culture, Friends and Enemies. The classification adopted is that of Prof. Pfitzer, which, however, the author thinks does not represent their line of descent, though he remarks that all the systems of classification yet proposed are artificial. The great faults of this system are, that it is based almost entirely upon the vegetative organs, and brings together plants which have no genetic affinity, while separating other obviously allied ones; that it revives various so-called genera whose claims have long ago been exploded, and makes other new ones which have not a leg to stand upon—witness Limatodes, Prepanthe, Aporum, Eulophidium, Macromitrium, Paphiopedilum, and others. One result of the adoption of this system is the perpetuation of a host of names which are worse than useless, and the imposition of others of equal value, of which Limatopreptanthe bella, Phajopreptanthe aurora and Phajolimatopreptanthe Sedeniana furnish excellent examples, to say nothing of over four hundred new names for hybrid Cypripediums and Selenipediums, here referred to Paphio-

pedium, which is certainly not a genus. And, as if this were not sufficient, we find in the enumeration of species that even synonyms long ago exploded, and even here not recognised, are still referred to Paphiopedium. And what shall be said of Paphiopedium barbatum, Lindl. (p. 30) and P. × Marshallianum, Rchb. f. (p. 550)? On p. 57 the figure of Cattleya Victoria-Regina is repeated, regardless of the fact that is made up from two different plants, while on p. 390 its habitat, and that of C. Alexandræ, is wrongly spoken of as still a mystery. The genus Cycnoches is hopelessly mixed, for we find the female of C. pentadactylon figured on p. 164 as the male of C. ventricosum, while on p. 205 both sexes of professedly the same species are given, though in reality they belong to the very different C. Warscewiczii, while the male is called the female, and *vice versâ*. Again, the enumeration of species on p. 426 is marred by four serious errors, besides which C. Pescatorei should be excluded. On p. 186 the old blunder about three sexes of Catasetum is repeated, though on p. 12 the author carefully cites the paper in which it was corrected. The remark on p. 41 that the only character common to Orchideæ and Burmanniaceæ is the inferior ovary is singularly unfortunate. Chapter XII. is devoted to Hybridisation, and incidentally we note that the author refers those who would study the history of hybridisation completely to "l'excellent *Orchid Review*." A short chapter is devoted to Fossil Orchids, of which one or two very doubtful examples have been described from the Eocene formation. Part II. is largely devoted to the geographical distribution of the various genera, with an alphabetical list of the principal species, and another of hybrids with their parentage; though most inexplicably nearly all the varieties of Lælio-cattleya × elegans are given as hybrids between that plant and Cattleya labiata. The cultural details, to which Part III. is devoted, are as satisfactory as the nomenclature part is the reverse. The woodcuts are for the most part familiar, also the chromolithographs. There is a good Index, but the Table of Contents is strangely out of place at the end of the volume. We regret to have to point out so many defects in an otherwise very useful work, especially as so many of them might, and ought to have been, avoided, and by pointing some of them out we hope at least to hasten the period of their ultimate disappearance.

COCHLIODA NŒTZLIANA.

A very fine specimen of this handsome species has flowered in the collection of Major-General C. B. Lucie-Smith, The Acacias, Worthing. It is a large clump, grown in a pan, and bore as many as ten of its gracefully arching spikes and one hundred and six flowers. It is a very easily-grown plant, and succeeds well in hanging pans or baskets in the cool house, in the usual compost of peat and sphagnum, with a plentiful

supply of water during the growing season. The flowers are of a pleasing shade of orange-scarlet, with a yellow disc to the lip and the column tinged with violet-purple. It is a native of Peru, whence it was sent by M. Jean Nötzli to Messrs. Linden, L'Horticulture Internationale, Brussels, and was named in honour of the introducer (Rolfe in *Lindenia*, t. 266), though from a mistake in the spelling of this gentleman's name, it was at first spelt "Noezliana." It received a Botanical Certificate from the Royal Horticultural Society on November 11, 1890, but has since greatly improved, though it is doubtful if the inflorescence will develop the free-branching habit originally shown. Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, afterwards introduced it from the same locality.

NOMENCLATURE OF CYPRIPEDIUM.

THE last-issued part of *Engler's Botanische Jahrbucher* contains an article by Prof. Pfitzer, of Heidelberg, entitled "Beiträge zur systematic der Orchideen," chiefly in reply to the startling changes in the nomenclature of Orchids proposed by Dr. Otto Kuntze. It concludes with some criticisms on the classification of the Cypripedium group. It will doubtless be remembered that some years ago this author proposed a system of classification based for the most part upon the vegetative organs, and among other changes, transferred the tropical species of Cypripedium and Selenipedium with coriaceous leaves to a new genus, which he called Paphiopedilum. To this, in my Review of the Apostasieæ (*Journ. Linn. Soc.*, xxv. p. 215), I objected, on the ground that the new genus possessed no difference in floral structure, being based entirely upon the conduplicate leaves (by a slip written "connivent"), and, moreover, contained species just as diverse as the foliose species of Cypripedium and Selenipedium, which he retained as distinct genera.

Prof. Pfitzer now returns to the question (*Engl. Bot. Jahrb.*, xix. p. 31), attempting to vindicate his position, and further giving an enumeration of the species. Cypripedium is called Cypripedilum, and is limited to the hardy foliose species. The section Diphyllæ is limited to C. japonicum, while its allies are transferred to section Foliosæ. Selenipedium is reduced to the three foliose species, which are called Selenipedilum; while all our familiar cultivated species are transferred to Paphiopedilum. Various exploded species are resuscitated, as P. Elliottianum, P. Gardineri, P. reticulatum, P. dilectum, and others, and thus unnecessarily increase the already too numerous synonymy. The latter is a synonym of P. Boxallii, which is wrongly enumerated in the group Tessellatæ, while P. villosum, of which the preceding is scarcely more than a variety, is referred to another group called Viridia. P. Charlesworthii is included in Tessellatæ, while its

nearest ally, P. Spicerianum, appears under Viridia. These are only specimens, and do not by any means exhaust the list of inconsistencies, whose culminating point is reached in Paphiopedilum cothurnum, the female of a Catasetum, P. Socco, the male of another, and P. epidendricum, a species of Cyrtopera; all three, be it noted, having plicate leaves, the very absence of which is the *raison d'être* of the so-called genus. Comment is needless.

The proposed change really means that genera shall no longer be based upon floral structure, but upon the vegetative organs. I have already pointed out that Reichenbach's genus Selenipedium has a substantial base to stand upon, having retained the ancestral character of a three-celled ovary with axile placentation, as in the tribe Apostasieæ (see remarks upon Neuwiedia Lindleyi at page 70), while Cypripedium has a one-celled ovary with parietal placentation, as in the rest of the family. All other characters are of subordinate importance. If this is to be ignored in the case of species with conduplicate leaves, and recognised in those with plicate ones, the whole thing becomes a farce. If both are recognised, we have four genera, if vegetative characters only, we have two, but they are not the two which floral structure indicates, and, in my opinion, no cause has been shown why this should be set aside. The three-celled ovary has a significance which alone deserves recognition, as it indicates the affinity with Apostasieæ, and the lines along which progressive modifications have taken place.

The necessity for the proposed changes in spelling may be inferred from the fact that Count Kerchove again transfers Pfitzer's Paphiopedilums to Paphiopedium. And thus the list of synonyms grows and flourishes amazingly.

R. A. Rolfe.

ZYGOPETALUM LINDENIÆ.

This distinct and pretty species of *Zygopetalum* has recently flowered in the collection of M. F. Finet, of Argenteuil, France. It is a native of Venezuela, and was introduced by Messrs. Linden, L'Horticulture Internationale, Brussels. It belongs to the section *Zygosepalum*, and is allied to *Z.* rostratum, Hook., having a similar beak-like rostellum, which is not apparent in the original plate, from which the description was prepared (Rolfe in *Lindenia*, t. 275), hence the species was wrongly supposed to belong to another section of the genus. It differs from *Z.* rostratum in having the lip closely and regularly striped with purple on a whitish ground. The sepals and petals are obscurely veined with purple-brown on a light ground, slightly tinged with greenish. The column is whitish, striped with purple in front, and has very large rounded wings. It will succeed in a warm, moist house, under the treatment given to *Z.* rostratum, to which it bears much resemblance in general habit.

LÆLIO-CATTLEYA × ELEGANS AT STREATHAM.

A large number of plants of this beautiful Orchid are grown in the collection of R. H. Measures, Esq., The Woodlands, Streatham, which we had the pleasure of seeing a few days ago. Here are about a hundred and twenty plants, most of them being either in flower or bud, and fifty of them being fully expanded. Most of the named varieties are contained in the collection, but instead of making a long enumeration, we refer our readers to page 235 of our last volume, where they are considered in detail. The plants are splendidly grown, and reflect great credit on Mr. Coles, under whose charge they are. The different forms vary greatly in colour, from the variety delicata, in which the sepals and petals are very pale green at first, but ultimately almost nankeen yellow, up to the deepest and richest forms allied to Turneri. There are some splendid six-flowered spikes, one of which, after being painted, has kindly been sent by Mr. Measures. It is called variety matuta, and has light rosy-purple sepals and petals with the slightest tinge of green, tightly-enrolled, almost pure white side lobes, and a nearly sessile, roundish, purple-crimson front lobe. It is a beautiful variety. Many Cattleya Leopoldi are in flower near them, and in going through such a number of plants one can easily trace its relation to the last-named and Lælia purpurata. It is notoriously variable, as hybrids generally are.

TRIGONIDIUM LATIFOLIUM.

This species was described by Lindley (*Bot. Reg.* x. sub. t. 1923), as long ago as 1837, from a Brazilian drawing made by Descourtilz, who found it "on the trees that surround the foot of the mountain of La Bucunha, and on the borders of the Rio Parahyba, below the town of Rezende, flowering in January," and strangely enough has remained practically unknown to the present day. It has now appeared in the collection of Henry M. Purchas, Esq., Chasedale, Ross., among plants imported from Brazil. It is allied to T. obtusum, Lindl., but has oblong acute leaves with attenuate base, from six to about seven inches long, by nearly two inches broad, besides showing certain differences in the flower. The sepals are light yellow, suffused with light maroon-purple about the middle and somewhat veined below. The petals are beautifully nerved with purple-brown on a light ground, and have a similar blotch at the convex acute apex. The lip is half as long as the petals with a fleshy obtuse yellow front lobe, and narrow inflexed side-lobes, with a purple margin, and a few minute purple spots near the base. T. macrantha, Rodr. (*Gen. et Sp. Orch. nov.*, i. p. 105), from the Organ Mountains, according to the description, must be very near this, if not specifically identical. The re-discovery of a species so long imperfectly known is very interesting. The plant has been presented to the Kew collection.

R. A. R.

CATTLEYA REX.

At page 226 we alluded to Cattleya Rex in the collection of T. Statter, Esq., Stand Hall, Manchester. We have now received a splendid photograph showing the group of ten plants, bearing sixteen spikes, and an aggregate of forty-five flowers, together with a three-flowered raceme. One of the plants bears three spikes. The majority of the spikes bear three flowers, but three have as many as four each, while the remainder have two. Comparing the photograph with the original plate, we note that the petals are hardly as spreading as represented, while the flowers themselves show a decided tinge of creamy-buff rather than white, in fact, we have not yet seen a flower which could be called pure white, though the tint varies somewhat in different individuals. The veining of the lip is also less pronounced, and does not extend so far towards the apex, neither is it so marked towards the base of the tube outside. It is certainly a very handsome Cattleya, and the deep buff-yellow tube, with light carmine front lobe, beautifully crisped-undulate whitish margin, and veined throat, form a very charming contrast with the cream-white or light yellowish sepals and petals. It also flowers at a very useful season, at the end of July and beginning of August, when the majority of Cattleyas are getting over. The plants are now well established, but it is doubtful if they have reached their full development, as the first imported plant is said to have produced six flowers. The individual flowers, however, have probably reached their normal dimensions. It is certainly a very welcome addition to the Cattleyas of the labiata group.

GONGORA PORTENTOSA.

This remarkable species has re-appeared, after a long interval, having flowered in the collection of Welbore S. Ellis, Esq., Hazelbourne, Dorking, from plants imported by him in 1892 from Columbia. It was originally described by Reichenbach in 1869 (*Gard. Chron.*, 1869, p. 892) from plants which flowered in the establishment of M. Linden, at Brussels, the plants having been sent by Gustav Wallis in the previous year, from the neighbourhood of Bogota. The sepals are almost light flesh colour, and the petals densely spotted with minute purplish dots. The lip is bright yellow with a few purplish dots on the side lobes. Its structure is very remarkable, and unlike that of any other known species. It is very fleshy, without any basal horns, but with a pair of reflexed bristles about the middle, and a very remarkable terminal lobe. There is a very peculiar callus on the front of the column, above the base of the petals. There are two published figures (*Ill. Hort.* xviii., t. 92, and *Bot. Mag.*, t. 6284) which well illustrate its remarkable character.

DENDROBIUM × NESTOR.

THE subject of our present illustration is a superb hybrid—we use the term advisedly, having seen it in full flower a day or two before the portrait was taken—which was raised in the collection of Charles Winn, Esq., The Uplands, Selly Hill, Birmingham, and flowered for the first time in 1892, when it was described as Dendrobium × Nestor (O'Brien in *Gard. Chron.*, 1892, i. p. 718). D. Parishii was the seed parent, and D. superbum anosmum the pollen parent. The two parents are intimately related to each other, and both have the flowers scented like rhubarb, though they differ much

FIG. 28. DENDROBIUM × NESTOR.

in size and stature, and come from localities far apart. The hybrid is fairly intermediate in character, and bears flowers of firm texture, three inches in diameter, and of a most brilliant, glossy rose-purple, with a large deep purple-crimson blotch on either side of the throat. Everything but the colour may be seen in the illustration, which speaks for itself. The original description says, "sepals and petals white tinged with rosy-lilac, . . . margin and front of lip pale rosy lilac, like the petals." This is very far from being the case now, and we noticed the discrepancy too late to ask for an explana-

tion for our present issue, though we should be glad to know if this is another seedling from the same batch, or if the colour was undeveloped at the first time of flowering. It is certainly a very handsome hybrid of a brilliant shade of colour, and we should not have expected so good a result from a cross between such closely allied species. The dwarfed habit is an improvement. The photograph was kindly sent by Mr. Winn.

SOBRALIA SESSILIS AND S. DECORA.

Some time ago I had occasion to look up the history of these two dwarf species, which have been very much confused, and as both are in cultivation the following information may be acceptable. S. sessilis, Lindl., flowered with Messrs. Loddiges, of Hackney, in December, 1840, the plants having been sent from Demarara by Mr. Schomburgk. It was described and figured in the following year, and is interesting as the first Sobralia which flowered in European gardens. Soon afterwards another species, which had been sent from Guatemala by Mr. Skinner, flowered in the collection of James Bateman, Esq., at Knypersley, and was described as S. decora, Batem. The latter was figured in the *Botanical Magazine*, in 1851, as S. sessilis, and although the mistake was subsequently pointed out, the erroneous name seems to have survived to the present day. S. Galeottiana, A. Rich., based on a specimen collected near Oaxaca, South Mexico, by Galeotti, also belongs to the same species, although Lindley keeps it separate, and adds to it a specimen collected in British Guiana by Schomburgk, which is only another variation of the confusion, for the latter really belongs to S. sessilis, and thus S. Galeottiana disappears altogether. The true S. sessilis has now re-appeared in cultivation, having been received from British Guiana, by Sir John Kirk, of Wavertree, Sevenoaks, who presented it to Kew, where it has recently flowered. It has rosy flowers, and the sheaths of the leaves are covered with numerous blackish purple hairs. A plant recently imported from Brazil, by Messrs. F. Sander and Co., St. Albans, probably belongs to the same species. S. decora has nearly white sepals and petals with a little pink on the lip, while the sheaths of the leaves are nearly smooth. Notwithstanding the way in which they have been confused they are really very distinct when seen side by side in a living state. The following is the amended synonymy of the two species :—

S. sessilis, *Lindl. Bot. Reg.*, xxvii. *Misc.*, p. 3, t. 17 ; *Lindl. Fol. Orch., Sobral.*, p. 7. S. Galeottiana, *Lindl. Fol. Orch., Sobral.*, p. 7, in part (not of A. Rich.).

S. decora, *Batem. Orch. Mex. and Guat.*, t. 26 ; *Lindl. Fol. Orch., Sobral.*, p. 7 ; *Rchb. f. Xen. Orch.*, I. p. 77, t. 30, fig. 2. S. Galeottiana, A. Rich., in *Ann. Sc. Nat.*, sér. 3, iii. p. 30 ; *Lindl. Fol. Orch., Sobral.*, p. 7, in part. S. sessilis, *Hook. Bot. Mag.*, t. 4570 (not of Lindl.).

R. A. Rolfe.

SOBRALIA XANTHOLEUCA, WIGAN'S VARIETY.

A very charming variety of Sobralia xantholeuca which has flowered in the collection of Sir Frederick Wigan, Clare Lawn, East Sheen, has received the above name. A flower sent by Mr. W. H. Young, who has charge of the Orchids, shows the sepals and petals to be of a nearly creamy white shade with a little suffusion of pale primrose, though when young they are very slightly flushed with light blush pink. The throat of the lip is bright canary yellow, and the front lobe creamy white, at first suffused with light pink blush, but afterwards with light yellow. The light blush tint is most distinct in the young flower. In every other respect the plant agrees with typical S. xantholeuca. We have seen a similar form from the collection of the late G. Hardy, Esq., Timperley, Cheshire. It is a very beautiful variety.

THE HYBRIDIST.

CYPRIPEDIUM × EXCELLENS.

AT the meeting of the Royal Horticultural Society, held on August 14th last, an Award of Merit was given to a superb hybrid from the collection of Thomas Statter, Esq., Stand Hall, Whitefield, Manchester, which had been obtained from C. Rothschildianum ♀ and C. × Harrisianum ♂. It was exhibited under the name of C. × excelsior. That name, however, belongs to a hybrid between C. Druryi ♀ and C. Spicerianum ♂, from the collection of M. Jules Hye, and we therefore propose the name C. × excellens for the present one. Mr. Statter has kindly forwarded the flower, which is superb. The dorsal sepal is exactly ovate, two and a quarter inches broad, light greenish yellow, closely striped with twenty-seven deep purple-brown lines. The petals arch downwards, and are four inches long by three-quarters of an inch broad, beautifully ciliate, and densely spotted along the nerves, the colours being the same as in the dorsal sepal. The lip is two and five-eight inches long, by three-quarters of an inch broad, and, as well as the obovate pubescent staminode, of a reddish purple shade. It is as fine as C. × Morganiæ, but more richly coloured, and is certainly a magnificent thing.

CATTLEYA × ATLANTA.

A particularly interesting hybrid was exhibited by Messrs. James Veitch and Sons at the meeting of the Royal Horticultural Society on August 14th last, under the above name. Its parents are Cattleya Leopoldi ♀ and C. Warscewiczii ♂. It bore a striking general resemblance to Lælio-cattleya × elegans, except that the front lobe of the lip had the brilliant colour of the pollen parent. It bore only a single flower, and received no award, but this in no way shows its merit. Both parents bear numerous flowers, which

only proves that the seedling is not nearly fully developed, and we are confident that it will develop into a magnificent thing. The resemblance to the plant just named is due to the influence of Cattleya Leopoldi in each, and as Cattleya Warscewiczii replaces Lælia purpurata in the novelty, we can easily imagine what it may develop into.

Cypripedium × Denisianum.

A handsome hybrid raised from Cypripedium superbiens and C. × selligerum. The raceme bears three flowers, much resembling the latter in shape, but having the petals flushed with rosy-purple, and much spotted with a darker shade, owing to the influence of C. superbiens. It can best be compared with C. × Youngianum, and its difference may be attributed to the influence of C. barbatum, which comes from its C. × selligerum parentage. The dorsal sepal is striped with purple on a light ground, and the petals more spreading than in C. × Youngianum. A plant was exhibited by Messrs. Linden, L'Horticulture Internationale, Brussels, at the Royal Horticultural Society's meeting on August 14th last.

LÆLIO-CATTLEYA × INGRAMI.

A good flower of this handsome hybrid from the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, shows what a fine thing it is. As will be remembered, it is a seedling from Lælia pumila Dayana ♀ and Cattleya Dowiana aurea ♂, which flowered in the collection of C. Ingram, Esq., Elstead House, Godalming, and received a First-class Certificate from the Royal Horticultural Society on August, 1892. Since then it has been exhibited on more than one occasion. It is most like the Lælia parent, though the flower is much improved in size, and the lip very richly coloured. The plant improves in strength, and this year has borne two flowers on the spike. It is certainly a very beautiful hybrid.

NEUWIEDIA GRIFFITHII.

The flowering for the first time in Europe of the remarkable Neuwiedia Lindleyi was recorded at page 70 of the present volume, and now a second species is flowering in the Kew collection. It is N. Griffithii (Rchb. f. *Xen. Orch.*, ii. p. 215), a native of Malacca and Perak, growing in dense old jungle. It is dwarfer than N. Lindleyi, being little over a foot high, the spikes from three or four inches long, and the flowers pure white, instead of yellow, and but little over a quarter of an inch long. It presents the same remarkable structure as the one previously described, and is particularly interesting as the most primitive Orchid known.

R. A. Rolfe.

CULTURE OF BOLLEAS AND PESCATOREAS.

Since the notes on the above subject appeared, at page 14, we have had the pleasure of seeing several of these handsome Orchids in flower, and noting the conditions under which they are grown, hence the following supplementary notes may be acceptable. We have several times seen Bollea Patini exhibited by Messrs. B. S. Williams and Son, of Upper Holloway, and at Manchester remarked that it rather disproved the theory that these plants are difficult to grow. They are grown in a warm, moist, and well-shaded propagating house, with a temperature of about 80° in summer and 70° in winter. The aspect is south, but this is rather a disadvantage than otherwise.

Here are Bollea Patini, B. Lalindei, and Pescatorea Dayana, which form part of an importation received many years ago from Patin. They grow steadily, and from time to time pieces are taken off and sold, which fact only confirms what was previously stated, that they can be grown under proper treatment. Paphinias are grown in the same house, also Phaius Humblotii, the rare Pachystoma Thompsoniana, Cypripedium Chamberlainianum, and various other Orchids. Messrs. F. Sander and Co., St. Albans, also find that heat, shade and moisture are the secrets of success. They grow them in a warm, very moist house, with a north-west aspect, and the beautiful specimens of Pescatorea Lehmanni, P. Klabochorum, and P. K. excellens, exhibited at recent meetings of the Royal Horticultural Society are sufficient proof of what the plants are capable of under such treatment. Now that their treatment is better understood, we certainly hope to meet with them more frequently in collections where suitable accommodation exists.

CYCNOCHES LODDIGESII ♀.

It is very interesting to record that female flowers of this remarkable Orchid have appeared in the collection of H. J. Elwes, Esq., J.P., Colesborne, Andoversford, Gloucestershire, in July last, under the charge of Mr. J. H. Lane. They are remarkably different from the male flowers in their very short and stout column, with well developed wings on either side of the stigma, and in the absence of the pollinia. The sepals and petals are light olive-green, the latter having some purple-brown on the disc, while the lip is almost like porcelain, very lightly marbled with purple, but ultimately becoming yellowish as the flower becomes old. This is the form which, before the so-called freak became known, received the name of C. cucullatum, full particulars of which are given at page 165 of our last volume. The reappearance of the female flowers after the lapse of fully half a century is extremely interesting.

NURSERY NOTES.

In looking through the houses of Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, a short time ago, we observed a number of fine Orchids in flower, though the principal ones were over for the season. Cypripedium × œanthum superbum was flowering in quantity, showing what a fine thing it is. C. × vexillarium, C. × selligerum majus, good plants of C. × superciliare and C. superbiens, the singular C. tonsum, and others were out, C. Charlesworthii being in bud. A fine Oncidium crispum was in flower, the rare O. anthocrene, O. ampliatum majus, O. pulvinatum, and O. macranthum, together with several Odontoglossums, as O. hastilabium, a good light form of O. ramosissimum, the yellow O. Schlieperianum flavidum, and various others, while a good plant of O. Wallisii, had six spikes in bud. Several plants of the charming Cochlioda Nœtzliana attracted attention; also the pretty Lælia monophylla, the distinct Broughtonia sanguinea, Cattleya Warscewiczii, Disa × Veitchii, Trichopilia Galeottiana, and the pretty blue Saccolabium cœleste, while the list could be very much extended. We saw a fine pod of Cattleya Dowiana aurea crossed with C. Warscewiczii, so that we may expect to see the parentage of C. × Hardyana proved in several collections in due time.

ONCIDIUM AMPLIATUM MAJUS.

A magnificent specimen of this fine Orchid has flowered in the collection of Wilfrid Marshall, Esq., Norton Manor, Taunton. It produced in May and June last thirty-two spikes, from five to nearly six feet high, and an aggregate of about six thousand flowers. It is from the same importation as the splendid mass exhibited by Messrs. F. Sander and Co., St. Albans, at the last Temple Show, and was even larger when purchased, as part of it had to be removed in order to get it into the largest sized pot on the place. A figure, reproduced from a photograph, appears in the *Gardeners' Magazine* for August 11th last.

ORCHID PORTRAITS.

Cypripedium caudatum.—*The Garden*, July 28, p. 85, with fig.

Dendrobium atroviolaceum, Rolfe.—*Bot. Mag.*, t. 7371.

Dendrobium Wardianum, Warn., var. Lindeniæ, Hort.—*Lindenia*, t. 419.

Disa × Veitchii.—*Gard. Chron.*, July 28, p. 93, fig. 14.

Grammatophyllum Measuresianum.—*Journ. of Hort.*, August 9, p. 123, fig. 19.

LYCASTE × SCHŒNBRUNNENSIS.—*Gard. Chron.*, August 4, p. 118, fig. 18.

MAXILLARIA MIRABILIS, Cogn.—*Lindenia*, t. 417.

MILTONIA × BLEUI SPLENDENS.—*The Garden*, August 4, p. 105, t. 973.

NEUWIEDIA LINDLEYI, Rolfe.—*Bot. Mag.*, t. 7368.

ODONTOGLOSSUM CRINITUM SAPPHIRATUM.—*Journ. of Hort.*, August 16, p. 147, fig. 22.

ODONTOGLOSSUM CRISPUM, Lindl., VAR. DALLEMAGNEÆ, L. Lind.—*Lindenia*, t. 420.

ODONTOGLOSSUM RAMOSISSIMUM.—*Journ. of Hort.*, July 26, p. 77, fig. 12.

ONCIDIUM AMPLIATUM MAJUS.—*Gard. Mag.*, August 11, pp. 475, 476, with fig.

PHAIUS SANDERIANUS, RALLI'S VARIETY.—*Gard. Mag.*, July 28, pp. 442, 443, with fig.

SOBRALIA × VEITCHII, *Journ. of Hort.*, August 2, pp. 98, 99, fig. 5.

ZYGOPETALUM INTERMEDIUM, Lodd., VAR. PERUVIANUM, Rolfe.—*Lindenia*, t. 418.

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperature in all departments should now be reduced by a few degrees. Let the thermometer in the East Indian house during bright sunny weather range between 75° to 85°; in dull weather between 70° to 75° will suffice; at night, about 70°, and morning, about 65°. The temperature for the Intermediate, Cattleya, and Mexican houses should be 70° to 75° with sun; without sun, 65° to 70°; night, about 65°, and morning, about 60°. Of course the thermometer will often indicate a higher figure when exposed to the influence of the sun, but it will do no harm; on the contrary, pure sun-heat is at all times to be courted, and is most beneficial when properly tempered by the admittance of fresh air.

Expose the plants to more light and sunshine by shading only when it is quite necessary to prevent scorching, and pay strict attention to the matter of ventilation. Both light and air are indispensable in order to well ripen the newly grown pseudobulbs. Twice a day will now be often enough to perform the operation of damping down if done thoroughly.

The temperature for the cool house must still be kept as low as possible, both night and day. These plants particularly enjoy the cool, dewy night air, which must not on any account be excluded. Plants of Odontoglossum crispum and others which have recently flowered, and are again pushing new growth, should be repotted, if necessary, when the new growth is from one to two inches high. The old compost generally becomes exhausted after about two years. It is unwise to disturb these or, indeed, any other Orchids by repotting when the new growth is far advanced, and more

especially at this autumnal season. Damp down three times a day; give an abundance of air; and here also shade only when necessary, for if too heavily shaded at this season cool Orchids become drawn and weakly and the foliage unable to support its own weight, a condition of things which must be avoided.

It has again become advisable to have recourse to fire-heat in the intermediate and warm houses during the night—in fact, for the latter there has been but few nights this summer when it has been safe to dispense with artificial warmth altogether, as the weather has been somewhat unseasonable. The nights are now getting chilly, and it is better to have sufficient warmth in the hot-water pipes, to admit of ventilation, rather than to have the ventilators tightly closed without such warmth. The first conditions are favourable to a pure and healthy growth, while the latter conditions are favourable only to disease in one or another of its many forms. Although the thermometer may not fall below a given point, yet the atmosphere becomes too heavily charged with moisture, which is stagnant and unwholesome, not resembling in the least the natural conditions under which they grow. I therefore advise, in order that the proper ripening process may proceed uninterruptedly, that a little warmth be now kept in the pipes each night, even though it be but for a few hours, and in dull, cold weather during the day also.

It frequently happens that it is very late in the season before some Orchids commence to form their annual growth, and this is particularly noticeable among the free and early summer-flowering Cattleyas of the labiata section, such, for instance, as Cattleya Mossiæ, C. Mendelii, and sometimes C. Trianæ. Some of these species may have flowered regularly and well for several years in succession, and getting a little later each year, may now only just be pushing forth their new breaks. This state of affairs need not be wondered at, if we take into consideration the drawbacks the plants have under artificial treatment. I have sometimes noticed plants gradually get so late that they have set themselves right again by skipping a season, and although making roots plentifully will make no pseudobulbs, and by this means take a complete rest, and are enabled to commence growing early the following spring. In this way they are set right again for several years. Sometimes, however, they are tempted to make a start at this late date, and where such is the case they must be placed at the warmest part of the house, and given every encouragement to grow. This lateness of growth should be avoided as much as possible, which depends largely upon the cultivation and attention the plants receive at their various seasons of activity and rest: for instance, if the light is insufficient during winter they are liable to become weakened, although at the time the fact is not perceptible. Houses giving the greatest amount of light are preferable. The same method should be adopted and practised on those plants that are

late to break as on those that are in an exhausted condition. Pinch off the flower buds as early as possible, and thus prevent them from flowering for a season, and it is almost sure to have the desired effect.

Newly imported Cattleyas, Lælias, and Dendrobiums, as I have before remarked, grow freely enough for a few years, feeding, as it were, upon their home-made stamina, and it is when this is spent that it is seen whether the right or wrong system of Orchid growing is being followed. Among the Dendrobiums that are now bringing their new growths to maturity, and will require to be taken to a cooler house to further ripen, will be found the following:—D. crassinode, D. Findlayanum, D. aureum, D. Linawianum, D. nobile, D. crystallinum, D. Boxallii, D. tortile, D. × Leechianum, D. × Ainsworthii, and D. × Dominianum. The last three are perhaps the best known among garden hybrids, but there are a host of other beautiful hybrids in cultivation, for the proper treatment of which due regard must be had to their parentage, the hybrids requiring exactly the same treatment as the parents. The above-named sorts when at rest during winter delight in a temperature of about 50° in mild weather and 45° in very cold weather. There are also finishing up about this time D. thyrsiflorum, D. densiflorum, D. Farmeri, D. Dalhousianum, D. fimbriatum, D. chrysotoxum, and D. suavissimum, all of which are evergreen, and these kinds must now also be taken to a cooler house, but it should be noted that they will not stand quite so much bright sunshine now, nor quite such a low temperature during the winter as the foregoing varieties. The temperature of the Cattleya house suits them well.

Most of the Dendrobium Wardianums will also now be fit to remove, and this species is one that will stand more cold when at rest than any of the other warm-growing sorts, and is the better for a temperature of 40° to 45° in cold weather and until the end of February. True D. Wardianum may be had in bloom in January, but it is a bad plan to force them thus, and the plants quickly deteriorate, whereas, if not allowed to flower until the middle or end of March, they would remain strong and healthy. It is quite natural for the new growth to push quickly from the base; they seldom remain quite dormant for long; but such growths make but little progress during the winter, only becoming thick and sturdy, and evidently enjoy the cold at the proper season. The flower buds also soon begin to swell, and this they do slowly, but surely, in the cold dry atmosphere, and quickly expand in March, when a little extra warmth is applied. Owing, however, to the new growths and flower buds showing so early, the plants are thought to want more heat to hasten them along, and they are straightway taken to a hot and moist-growing temperature, hence the reason of this beautiful Dendrobium being too often seen badly flowered and in a dilapidated condition. There are also others now finishing their pseudobulbs, but on account of their coming from a hotter region are best if

always allowed to remain in the warmest house. Amongst these will be found D. formosum giganteum, D. Parishii, D. stratiotes, D. superbiens, D. macrophyllum, D. Maccarthiæ, D. Lowii, D. Dearei, D. bigibbum, D. Bensonii, D. albosanguineum, D. aggregatum, and D. Phalænopsis, and it is fatal to these species if allowed to get too cold even when quite dry and dormant.

The volume of water given to such Orchids as Saccolabiums, Aërides, Angræcums, Vandas, and Phalænopses may now be slightly reduced. They have now partially finished their season's growth, which requires to be hardened off to a certain extent, but let it be borne in mind that it is quite easy to permanently injure this class of Orchids by over-exposure to sunshine, or by sudden or excessive drought at the root. They must never, not even in the shortest days, be allowed to become dust dry, and never on any account be subjected to such rigorous treatment as advised for other Orchids having pseudobulbs. All that is required is to simply give less water at the roots, a less moist atmosphere, and keep on a gentle circulation of fresh air whenever possible.

The deciduous Calanthes are now pushing up flower spikes, and the application of liquid manure (cow or sheep's dung) may be continued. Cœlogyne cristata will also be greatly assisted by occasional waterings with the same manure. Anguloas are strengthened by its use, as also are Sobralias, Cymbidiums, Thunias, and Pleiones. The two latter, although apparently finished, must still be kept just moist at the root.

Plants of Chysis may be removed when they have finished their new pseudobulb and rested in intermediate temperature. They bloom in spring. Cycnoches must also be removed from the heat after flowering, and well rested under the same conditions. Cryptopodiums must be rested near to the glass and kept very dry to ensure free flowering. I think a dry position in the warm house is preferable. Eulophias grow best if allowed to remain in the warm house and kept dry after flowering. Zygopetalums are best allowed to remain in intermediate temperature, both when growing and when at rest. After flowering they enjoy a short rest, but must not be allowed to get very dry. They grow best in a compost of rather more body than is usual for most Orchids; a liberal addition of fibrous loam and silver sand should be mixed with the peat and sphagnum moss; and the proper season to repot is directly they push new growth.

Stanhopeas, after flowering, enjoy a good rest in intermediate temperature, and should be re-basketed in spring. Schomburgkias grow well with the Mexican Orchids, although they are sometimes grown in the warmest house and rested in the Mexican house. Renantheras require similar treatment to Saccolabiums. R. coccinea is of a rambling habit, and rarely flowers well until it has grown high up to the roof in full sunlight. Lælia monophylla is just coming into flower, and is best grown in small pans or

baskets, suspended in the Odontoglossum house, and never allowed to become very dry. Galeandra nivalis grows best in warmth, and rested in the Cattleya house. G. Devoniana grows best in the last-named house; they flower as soon as growth is completed, after which they must be rested by withholding water.

Dendrobium cymbidioides is a pretty little thing, and grows best in the Cattleya house, kept comparatively dry only when resting. D. speciosum does well with the Mexican Orchids, but should be rested in a cool, dry greenhouse. It is necessary to produce pseudobulbs of a large size before it blooms freely. Comparettias grow best suspended in the Cattleya house. Yellow thrip is troublesome to them, and soon kills them if not prevented. Camarotis purpurea require similar treatment to the warm Aërides. Cattleya maxima is better for a somewhat shady position. Ada aurantiaca grows best in the intermediate house; the temperature of the cool house causes spot.

Acinetas should be grown in baskets without crocks, as the flower spikes come through the bottom of the baskets. They are showy Orchids, but the bulbs must be a large size before they flower. They should be well rested during winter, for if kept too moist they are susceptible to black spot; they are best suited when occupying a warm part of the Cattleya house. Broughtonia sanguinea should be grown on a block in the warmest house. Brassias are a family of warm intermediate Orchids, and require the same treatment as Oncidiums. They are not by any means fashionable, and are not largely grown; some few, however, such as B. maculata and B. verrucosa, are worth cultivating. Any of the white Lælia anceps which are not going to bloom, and are in a very bad condition, may be repotted at this season quite safely and with good results; the others will be best if left until spring.

POLYPODIUM FIBRE VERSUS PEAT.

I have read with interest the notice on the use of Polypodium fibre for potting up Orchids at page 242 of the ORCHID REVIEW. I believe I was the first person to induce Mr. Outram, of the firm of Messrs. B. S. Williams and Son, to try it with Odontoglossums, but at the same time I would strongly advise any one using the same to experiment with some plants of small value, as it has in many cases proved disastrous to Cattleyas by breeding fungus and destroying their roots. Polypodium by itself seems to do very well, but it is when in juxtaposition with sphagnum that the mycelium of the fungus is produced. I think Mr. White, Sir Trevor Lawrence's able grower, will bear me out in what I have said. I know it has been extensively tried at Burford, and I do not think it has altogether succeeded. Masdevallias were a dead failure in it, and so were Cypri-

pediums. I find Odontoglossum crispum grows very well in it in this climate. My *modus operandi* for cool Orchids is as follows:—We have all the rhizome extracted — this is essential — and then place two-thirds sphagnum to one-third Polypodium fibre, and pass it through a chaff-cutting machine. This cuts the mixture up very fine, and we use it as it leaves the cutter. I know the Continental firms use it also for Cattleyas and Lælias, but whether it has any advantage over good peat I have much doubt. My friend, Dr. Foulis of Edinburgh, on my advice, potted all his warm Orchids in it, and with most disastrous results, as it produced fungus and destroyed all their roots. I hope he may write you his experience on the subject—as well as others who have tried it. When once the fungus has disappeared, plants seem to do very well in it. I may add that I have some four thousand imported crispums potted up in it this year, and they are doing as well as I could possibly wish. R. Brooman White.

Arddarroch, Garelochead, Dumbartonshire.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

There was a very good show of Orchids at the Drill Hall, James Street, Westminster, at the Royal Horticultural Society's meeting on July 24th, and many of the exhibits were of great merit.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. E. Hill), sent spikes of two magnificent forms of Cattleya × Hardyana. The first was labelled Tring Park variety, but is extremely near the original typical form. It was a splendid inflorescence of five flowers, and received both a First-class Certificate and a Cultural Commendation. The other was the variety laversinensis, a two-flowered inflorescence, with blooms of great size, the sepals and petals beautifully mottled with rose and white, and the lip dark and very richly coloured. It also received a First-class Certificate.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited Cattleya granulosa superba, a three-flowered inflorescence of a very fine variety, with much white on the margin of the lip, which received an Award of Merit, and Cattleya Warscewiczii regalis.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), showed a plant of Cattleya Warscewiczii, with an inflorescence of six magnificent flowers, and a fine plant of Anguloa Ruckeri with ten flowers, a Cultural Commendation being awarded to the latter.

F. W. Moore, Esq., Royal Botanic Garden, Dublin, sent flowers of Bifrenaria tyrianthina, the interesting Bollea Lalindei, the singular Gongora atropurpurea, Bulbophyllum leopardinum, and Dendrobium ciliatum, the latter receiving a Botanical Certificate.

F. M. Burton, Esq., Highfield, Gainsborough, sent some Cypripedium seedlings.

The Hon. Mrs. Foley, Fordingbridge, Hants, exhibited a plant of the very interesting Mormodes aromaticum, with a fine inflorescence of buff-yellow flowers spotted with brown.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), exhibited two hybrid Cypripediums, C. × Hobsoni derived from C. Lawrenceanum ♀ and C. philippinense ♂, and C. × Millmani, derived from C. callosum ♀ and C. philippinense ♂. Both are naturally allied to C. × selligerum.

G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester, sent Cypripedium Godefroyæ leucochilum.

The Right Hon. Lord Llangattock, The Hendre, Monmouth, sent Cypripedium × The Hendre, derived from C. Lawrenceanum ♀, and a form of C. × Harrisianum ♂.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent a spike of Brassia Wrayæ, a form of B. maculata.

S. G. Lutwyche, Esq., Beckenham, showed a plant of Stanhopea guttulata, with the flowers not fully expanded.

Pantia Ralli, Esq., Ashtead Park, Epsom (gr. Mr. Hunt), showed a good plant of Anguloa uniflora eburnea with seven flowers.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. W. H. Young), staged a good plant of Brasso-cattleya × Lindleyana (Lælia × Lindleyana), believed to be a natural hybrid between Brassavola tuberculata and Cattleya intermedia, with which it grows.

Reginald Young, Esq., Fringilla, Sefton Park, Liverpool, sent good flowers of Cattleya Eldorado crocata, from the plant illustrated in the *Reichenbachia*.

Messrs. James Veitch and Sons, Royal Exotic Nursery, as usual, sent several very fine hybrids, two of which received First-class Certificates. These were Sobralia × Veitchii, a handsome thing derived from S. xantholeuca ♀ and S. macrantha ♂, and Lælio-cattleya × Zephyra, a charming form, derived from Cattleya Mendelii ♀ and Lælia xanthina ♂. It most resembles the latter, the sepals and petals being light buff, the front lobe of the lip purple-crimson, and the rest yellow, deepest in the throat. The fine Lælio-cattleya × Pallas, which has been previously certificated, was also shown, and a pan of the pretty Dendrobium glomeratum with about thirty spikes of flowers.

Messrs. F. Sander and Co., St. Albans, staged a fine group of very interesting things. Lycaste × Schœnbrunnensis and Galeandra lagoensis each received an Award of Merit, while Pleurothallis Krænzlinii and Catasetum Christyanum both secured Botanical Certificates. Other interesting things were Cycnoches peruvianum with two long racemes of male flowers, a good plant of Cryptophoranthus Dayanus with twelve

flowers, the beautiful Pescatorea Lehmanni, the rare Odontoglossum Galeottianum, Catasetum macrocarpum with a spike of thirteen male flowers, Dendrobium O'Brienianum and its variety striatum, the Brazilian form of Oncidium Jonesianum with long and slender leaves, Angræcum Scottianum, Aërides Sanderianum, Cattleya Rex with three-flowered inflorescence, C. Leopoldi pernambucensis, the fine Cattleya × Prince of Wales (C. Mossiæ Wageneri ♀ × C. intermedia ♂), the pretty Cypripedium × modestum (C. purpuratum ♀ × C. × Io ♂), C. × Youngianum, and others.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, staged an excellent group, to which a Silver Banksian Medal was awarded. Habenaria carnea nivosa, a variety with beautiful white flowers, and Odontoglossum citrosmum sulphureum with light buff-yellow sepals and petals, each received an Award of Merit. Other interesting things were the true Restrepia antennifera with striped flowers, Bifrenaria vitellina, Zygopetalum Gautieri, Microstylis Scottii, Lælio-cattleya × Schilleriana, and other Orchids.

Messrs. Hugh Low and Co., Upper Clapton, sent an interesting group, including four plants of Cypripedium Charlesworthii in flower, Paphinia rugosa, Lælio-cattleya × amanda, a plant of Trichopilia Gallottiana with twelve flowers, Oncidium Lanceanum, Angræcum articulatum, &c.

Mr. H. A Tracey, Orchid Nursery, Twickenham, received an Award of Merit for a fine form of Cattleya Mendelii called H. A Tracey.

Messrs. B. S. Williams and Son, Upper Holloway, sent Odontoglossum Schlieperianum and its pretty yellow variety flavidum, and the fine Oncidium crispum grandiflorum.

The meeting held on August 14th was remarkable for the number of choice and interesting things exhibited, and especially for a splendid group of the new Cypripedium Charlesworthii exhibited by Messrs. Hugh Low and Co., showing a considerable range of variation in the colour of the dorsal sepal.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited a very fine group of cut spikes, to which a Silver Banksian Medal was awarded. It contained Cattleya Rex, C. Gaskelliana alba, C. granulosa, Lælia crispa and its variety superba, the beautiful Lælio-cattleya × Amesiana, L.-c. × elegans and varieties excellens, Oweniana, Bluntii, splendidissima, and prasiata, and a hybrid Cypripedium raised from C. Fairieanum and C. callosum, evidently a form of C. × Juno, and resembling a light-coloured C. × vexillarium. From the same collection came a plant of a very handsome hybrid Cypripedium raised from C. Rothschildianum ♀ and C. × Harrisianum ♂, called C. × excelsior, to which an Award of Merit was given.

M. Wells, Esq., Broomfield, Sale, received a First-class Certificate for

Lælio-cattleya × Ingrami var. broomfieldensis, perhaps the largest and best form of his hybrid yet seen. Its parents are C. Dowiana chrysotoxa and L. pumila var. præstans.

Walter Cobb, Esq., Tunbridge Wells, received an Award of Merit for a good dark variety of Lælio-cattleya × elegans called Dulcotensis, in which the front lobe of the lip is very short and broad.

W. R. Lee, Esq., Audenshaw, Manchester, exhibited cut blooms of Lælia crispa, Odontoglossum crispum and several Cypripediums, together with a plant of the very fine hybrid Cypripedium × W. R. Lee, raised from C. superbiens ♀ and C. Elliottianum ♂, to which an Award of Merit was given.

W. C. Clarke, Esq., Orleans House, Sefton Park, Liverpool, exhibited a Cypripedium called C. × Mabelianum, the recorded parentage being identical with the preceding, though not equal to it in point of merit.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent three good Cypripediums, C. Godefroyæ Cambridge Lodge variety, C. leucochilum aureum, and C. × tessellatum porphyreum, to each of which an Award of Merit was given.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill, exhibited cut spikes of Epidendrum Brassavolæ, E. radiatum, and Stanhopea inodora, each of them receiving a Botanical Certificate.

W. M. Appleton, Esq., Weston-super-mare, exhibited two good spikes of Lælia crispa.

H. Hollis, Esq., Beechcroft, Exbaxton (gr. Mr. Swain), exhibited a very good form of Cattleya Warscewiczii.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins), exhibited Oncidium macranthum Smeeanum, a light yellow form, and a flower of Stanhopea Bucephalus.

The Director, Royal Gardens, Kew, sent a plant of the pretty pink Disa nervosa, a native of Natal, and a group of seven of the fine Disa × kewensis, marked as having been in flower for six weeks.

Messrs. Hugh Low and Co., Clapton, received a Silver Flora Medal for a splendid group containing sixty plants in flower of the beautiful Cypripedium Charlesworthii, a plant of Cattleya Rex, Lælio-cattleya × elegans, and two or three each of Vanda Sanderiana, the pretty Saccolabium cœleste, Miltonia Roezlii and its variety alba.

Messrs. James Veitch and Sons, Chelsea, staged Cypripedium × Morganiæ langleyensis, the pretty Lælio-cattleya × Stella, and Cattleya × Atlanta, a fine hybrid derived from C. Leopoldi ♀ and C. Warscewiczii ♂.

Messrs. F. Sander and Co., St. Albans, staged an interesting group, comprising several plants of the slender form of Oncidium Jonesianum, the new Cœlogyne Swaniana, Rolfe, the interesting Galeanda lagoensis, Mormodes pardinum unicolor, Dendrobium Phalænopsis and D. bigibbum,

the pretty Masdevallia × Stella, Oncidium ornithorrhynchum album, O crispum, Physosiphon Loddigesii, Cypripedium × Morganiæ, C × Umlauftianum, Calanthe Sanderiana, C. veratrifolia, and C. × Laucheana, said to be a hybrid between the two last named, C. veratrifolia being the seed parent. It is fairly intermediate in shape and colour. A pretty hybrid Cattleya was also included, called Mrs. M. Wells, derived from C. × Prince of Wales ♀ and C. Warneri ♂. The Peruvian Bletia catenulata, which was described a century ago, received an Award of Merit as a new species under another name, which must be suppressed.

Messrs. W. L. Lewis and Co., Southgate, staged an interesting group, and received a Vote of Thanks. It contained a pan each of Habenaria carnea and its pretty variety nivosa, H. cinnabarina, Anguloa Ruckeri, Bulbophyllum Lobbii, Oncidiums crispum, Gardnerianum, and micropogon, Cypripedium × Hobsoni, C. × Millmani, and others, Cattleya Gaskelliana and C. × Ashtoniana, which latter received an Award of Merit.

Messrs. Linden, L'Horticulture Internationale, Brussels, exhibited Cypripedium × Denisianum and two strong plants of Lælio-cattleya × elegans, one with a nine-flowered, the other with a seven-flowered raceme.

Messrs. B. S. Williams and Son, Upper Holloway, staged an interesting group containing the rare Pachystoma Thomsoniana, Odontoglossum Kramerianum, Lælia xanthina agraphis, L. monophylla, Oncidium × litum, the fine Brassia brachiata, Cochlioda vulcanica, Lælio-cattleya × blesensis, Phaius Humblotii, and Cypripedium × Adonis.

Messrs. Condor and Raphael, Hazelwood, King's Langley, Herts, sent a group of ten healthy and well-flowered Dendrobium formosum giganteum, to which a Cultural Commendation was given.

Messrs. Heath and Son, Cheltenham, sent a spike of the rare Arachnanthe moschifera, which received a Botanical Certificate.

CORRESPONDENCE, &c.

R. Young, Esq., Sefton Park, Liverpool, sends three fine racemes of Lælia crispa, each with seven flowers. No. 1 is about typical, with long, much-crisped front lobe and white side-lobes. No. 2 has a short, rather broad front lobe with dark blotch on lip, which is flatter and less crisped than usual. No. 3 is very handsome with the deep purple running right round the apex of the side-lobes, and the front lobe large, much crisped, and beautifully veined. No. 4 is about typical Lælio-cattleya × elegans.

W. L. H. Wartley.—Stanhopea inodora.

G. H., California.—Lælia × Crawshayana has no connection with L. × Finckeniana. See vol. i. p. 30, but the point is not certain. Dendrobium japonicum is a synonym of true D. moniliforme, Sw. D. moniliforme, Lindl., is D. Linawianum. Cattleya Trianæ is correct, not C. Trianæi. Cypripedium siamense, Rolfe, is described in *Gard. Chron.*, 1890, i. p. 161. Calanthe Williamsii is a form of C. Regnieri. Other questions hereafter.

We regret to learn that copies of our July number failed to reach their destination, owing to the burning of a mail car of the California express, by which over two hundred sacks of papers and some letters were destroyed. We forward other copies.

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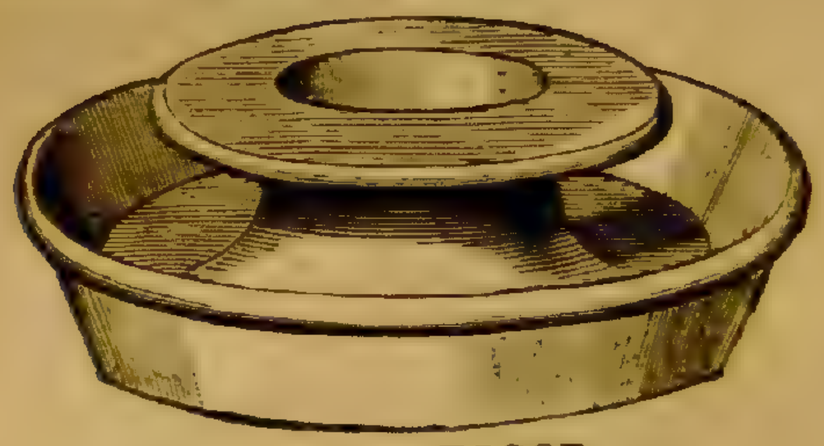

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VOL. II.] OCTOBER, 1894. [No. 22.

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An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	289
Habenaria carnea and its var. nivosa...	290
The Stand Hall Collection	291
Cattleya × Victoria-Regina	293
Novelties	294
Fertilisation of Orchids in the Tropics	295
Cattleya Gaskelliana alba	296
Dies Orchidianæ	297
Cattleya Warscewiczii	299
Dendrobium Phalænopsis at Cheltenham	300
Odontoglossum Harryanum	300
Cattleya Eldorado	301
Cattleya elongata	302
Satyrium candidum	302
Nomenclature of Hybrid Cypripediums	303
Warscewiczella amazonica	304
Reichenbachianæ	304
A group of Odontoglossums	305
O. crispum xanthotes (Fig. 29) ...	305
O. × Andersonianum var. (Fig. 30)	305
O. × A. superbum (Fig. 31) ...	306
O. × Horsmanii (Fig. 32)	306
Odontoglossum × Andersonianum, Young's variety	306
Cattleya chocoensis at home	307
Cypripedium Curtisii	307
Stauropsis philippinensis	308
The Hybridist	309
Cypripedium × James H. Veitch, &c.	309
Lælio-cattleya × Parysatis, &c. ...	310
Orchid Portraits	311
Calendar of Operations for October ...	312
Orchids at the Royal Horticultural Society	317
Correspondence, &c.	320

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VOL. II.] *OCTOBER*, 1894. [No. 22.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during October, on the 9th and 23rd, respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

On the former date a lecture will be given at 3 p.m., by Mr. E. H. Woodhall, entitled "How to Popularise Orchid Growing."

The sale of the remaining portion of the late Mr. George Hardy's collection is announced to take place on October 16th, and following days.

A plant of Cattleya Trianæ is now flowering in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, bearing a raceme of five flowers. It is a newly-imported plant, and this may account for its blooming so curiously out of season.

A plant of Cypripedium Fairieanum, "over three feet across," is mentioned in the *Gardeners' Chronicle* for August 25th last (p. 221), as having been cultivated at Kew during the time the late Mr. Gower was there. But can any one confirm the report?

A magnificent form of Cattleya Dowiana aurea has just flowered in the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, of which we have received a flower from Mr. Hamilton. The lip is very richly coloured, being almost blackish crimson, veined with deep yellow, and the sepals and petals uniformly bright yellow, the latter being two and a quarter inches broad.

A curious inflorescence of Dendrobium × Ainsworthii has appeared in the establishment of Messrs. F. Sander and Co., St. Albans—a sort of young growth and raceme combined. After producing a few leaves the young growth suddenly terminated in two flowers at the apex, the sepals and petals being elongated and narrow, and the lip also longer and narrower than usual, the colour, however, being unaltered.

Professor A. Franchet in a recent number of the *Journal de Botanique* has described six new species of Cypripedium from China, four belonging to the section Foliosæ, and two to Diphyllæ, the two latter, with C. margaritaceum, forming a curious little group, characterised by the absence of a bract below the flower. By an oversight C. Henryi (Rolfe) has been redescribed as C. chinense.

The *Journal of Botany*, in discussing the indexing of periodicals, remarks that the ORCHID REVIEW gives an excellent index of species and subjects, extending over seven pages, but entirely omits the names of contributors, which it would like to have seen included.

A fine flower of Cypripedium Charlesworthii has been sent by O. O. Wrigley, Esq., Bridge Hall, Bury. It is one of five flowers open, all on different plants, and well illustrates the beauty of the species, which has now flowered in many other collections.

HABENARIA CARNEA AND ITS VARIETY NIVOSA.

The beautiful Habenaria carnea which appeared as a new plant such a few years ago, and to which a First-class Certificate has been awarded by the Royal Horticultural Society, has now become quite common, and has been flowering in quantity in various collections. It seems to be a plant of very easy culture, and when grown several together in pots or pans is extremely effective, on account of its dwarf habit and large delicate flesh-pink flowers. The leaves are also very beautiful, being spotted with white on a ground colour of an almost indescribable shade of grey suffused with pinkish brown. A variety with white flowers has now made its appearance, and this too is in several collections. Messrs. W. L. Lewis and Co., of Southgate, received an Award of Merit for it at a meeting of the Royal Horticultural Society on July 24th last, and this seems to have been its first appearance. Besides the differently coloured flowers, the leaves are also green and unspotted. It appears to be as easily grown and floriferous as the type. They are charming companions to the beautiful Habenaria militaris, which is now flowering freely in various collections.

THE STAND HALL COLLECTION.

For a number of years past Stand Hall, Whitefield, Manchester, has been celebrated for its Orchids. The rich collection brought together by the late Thomas Statter, Esq., was sold at his death; but his son, who bears the same name, is determined to uphold the tradition, and the houses are again filled with a large number of choice things, so that the collection, which still remains under the care of the old *chef*, Mr. Robert Johnson, bids fair to rival its former magnificence. The Cattleya group and Cypripediums are evidently first favourites, though many Dendrobiums and various cool Orchids are also cultivated, Odontoglossums naturally taking the lead among the latter. Some time ago we had the pleasure of going through this fine collection, and the following notes will doubtless prove interesting to our readers.

The Cattleyas and allies may be mentioned first, and a particularly fine and well-cultivated lot they are. One or two peculiarities about the house may be noted in passing, as they probably exert an influence on the well-being of the plants, and may be of service to others. Very little top air is admitted at any time, but the bottom ventilators are almost always open. The larger plants are grown on stone benches, in which a number of circular holes are cut. Underneath are water tanks and the hot-water pipes, so that the air which is continually coming in becomes warm and moist before reaching the plants. This end may of course be attained by other means, but in conjunction with proper attention in the matter of potting and watering cannot fail to yield successful results, as in the present instance.

In addition to a good collection of the usual commoner species may be mentioned many choice varieties and hybrids, as the rare Cattleya superba alba, a beautiful white form of C. Warscewiczii, the natural hybrid C. × Brymeriana, a fine form of C. Leopoldi, the splendid Cattleya Dowiana Statteriana, and C. × Hardyana Statteriana, a marvellous form of that fine natural hybrid with white sepals and petals, which is probably unique. A fine batch of ten plants of Cattleya Rex were in sheath, and have since flowered in brilliant fashion, as was recorded at p. 272. A curious and apparently rather rash experiment was made with a plant of Cattleya × Minucia, which we should hesitate to repeat, in spite of the success which attended it. There were five pseudobulbs on the plant, and each one was separated by cutting through the rhizome. Every one, however, produced a back growth, though some were very small at first, and now there are five plants instead of one, which says much for the constitution of the plant, which, it may be remembered, is a hybrid between C. Loddigesii ♀ and C. Warscewiczii ♂.

A splendid plant of Lælia tenebrosa with thirty pseudobulbs was pushing

nine sheaths, and this has since received a Cultural Commendation from the Royal Horticultural Society. Among the many fine forms of Lælia purpurata was the beautiful L. p. Russelliana, other species being of course well represented. Among the Lælio-cattleyas were many interesting plants, as the splendid L.-c. callistoglossa, L.-c. × Nysa, L.-c. × exoniensis, L.-c. × Hippolyta and × Phœbe, L.-c. × eximia, a splendid L.-c. Amesiana with thirty bulbs, and various others which might be enumerated, including a fine series of Lælio-cattleya × elegans.

Hybridisation is carried on rather extensively, and in this particular group we observed many promising crosses, for example, Lælio-cattleya elegans ♀ × L.-c. × Nysa ♂, Lælia tenebrosa ♀ × Cattleya Warscewiczii ♂, C. Warscewiczii × C. Rex, and the reverse cross, C. Dowiana aurea ♀ × L. purpurata ♂, L. pumila Dayana ♀ × Cattleya Dowiana aurea ♂, of which there are nice plants two years old, and various other interesting combinations. Mr. Statter has the pollen of many fine species sealed up in quills and carefully labelled, so as to be able to cross species which flower at different seasons of the year, and in connection with this it would be interesting to know how long pollen may be kept before losing its vitality. The most remarkable cross we noticed was Epidendrum × O'Brienianum fertilised with the pollen of Dendrobium crystallinum Statterianum, and of this there were myriads of young seedlings germinating, though the seed was only sown in February. The cross was carefully made, and it will be curious to observe the result when the seedlings reach the flowering stage.

The Cypripediums are a fine lot—hundreds of plants in the most robust health, a large number of seedlings being included, some representing new crosses, while others have already flowered in other establishments. The most remarkable of all was one said to have been raised from Selenipedium × Sedeni crossed with the pollen of Cypripedium Stonei, of which scapes were pushing up. The plant bore much resemblance to the pollen parent, though no trace of the other could be detected, which seems quite inexplicable, if the records are correct. Among interesting crosses may be mentioned C. Rothschildianum ♀ × Lawrenceanum ♂, C. bellatulum ♀ × Rothschildianum ♂, C. Elliottianum ♀ × Spicerianum ♂, and many others, some of the young plants being well advanced. C. callosum × Fairieanum and the reverse cross were germinating, the circumstances being particularly interesting. Of crosses which have already flowered elsewhere may be mentioned C. Lawrenceanum × Curtisii, and C. niveum × Lawrenceanum, both in bud, C. Lowii × Boxalii, in flower, and C. philippinense × venustum. The reversed cross of C. × Morganiæ may also be mentioned, though it is not likely to differ much from the original. Among particularly interesting plants may be mentioned, Cypripedium × Paris, C. × southgatense superbum, C. × Evenor, C. × Aylingii, C. × Statterianum, and a plant of the rare and beautiful Selenipedium × Saundersianum. The species and a

host of the commoner hybrids need not be enumerated, though some fine plants are among them.

Turning to other things, some sturdy plants of Dendrobium Phalænopsis, D. nobile nobilius, D. Wardianum, and D. × splendidissimum grandiflorum were pointed out, also D. × Rolfeæ and good D. Devonianum. Noteworthy among Odontoglossums were the beautiful O. × mulus Statterianum and O. triumphans, with many others. A collection of coloured paintings (some of them by Mr. Macfarlane) revealed other beauties of the collection, a marvellous form of C. Warscewiczii, a large and very handsome form of C. Lueddemanniana, a very dark and somewhat flamed variety of Cattleya labiata, Lælio-cattleya × elegans blenheimensis, and many others, some of which have already been mentioned. The collection is a rich and growing one, as showy varieties and hybrids are continually being added, as well as imported plants, so that in a few years time it will probably far eclipse its present excellence, except in the matter of culture, on which it would be difficult to improve.

CATTLEYA × VICTORIA-REGINA.

We had occasion to allude to this beautiful plant at page 7 of the present volume, when we threw out a suggestion that it might be a natural hybrid between the Pernambuco variety of Cattleya Leopoldi and C. labiata, in company with which it grows. Having had the opportunity of seeing an authentic plant in the collection of W. J. Thompson, Esq., Walton Grange, Stone, Staffordshire, as mentioned at page 245, we have no longer any doubt in the matter. This plant has eight pseudobulbs, two of which are one-leaved, as in C. labiata. and two others two-leaved, as in C. Leopoldi, the four older ones having lost their leaves. The single leaves are erect, and much like those of C. labiata in shape, and the others, though more like C. Leopoldi, are also modified in the same direction; and a similar remark applies to their respective pseudobulbs. Even the habit is much dwarfed and approaches C. labiata rather than the other parent. It is hardly necessary to point out that similar characters are observed in the case of all hybrids between diphyllous Cattleyas and monophyllous species of either that genus or Lælia, and as the flowers of C. × Victoria-Regina are equally intermediate there need remain no longer any doubt of its being a natural hybrid between the two species named. We should be glad to hear of the existence of any other genuine plant, for we have been assured that it is a myth, and have again this autumn received flowers of Cattleya Leopoldi which was purchased as C. Victoria-Regina. Its rarity will now be easily understood.

NOVELTIES.

CATTLEYA × HARDYANA, VAR. COUNTESS OF DERBY.—This is the magnificent Cattleya which was exhibited by T. Statter, Esq., Stand Hall, Whitefield, Manchester, at the meeting of the Royal Horticultural Society on September 11th last, as a supposed variety of C. Warscewiczii (gigas), and to which a First-class Certificate was awarded. It has, however, several of the unmistakable characters of the natural hybrid between that species and C. Dowiana, and in fact it chiefly differs from the original C. × Hardyana in having creamy-white sepals and petals. It differs from C. × Hardyana Statteriana in having the whole of the front lobe of the lip of an intense purple-crimson, instead of only half of it, and a corresponding smaller amount of yellow. In the amount of veining derived from C. Dowiana, as well as in the general shape of the flower, it is very similar to the original C. × Hardyana, of which we have now quite a number of varieties. The present one is a superb acquisition.

BULBOPHYLLUM LEYSIANUM, Burbridge.—A very distinct species, discovered by Mr. F. W. Burbridge on trees overhanging the river near the ford at Sinaroup village, North-west Borneo. The flowers are large, solitary, and borne on scapes from five to seven inches long, a little exceeding the leaves. The dorsal sepal is yellow with purple veins, and somewhat resembling that of B. Dearei, Rchb. f., and the lateral sepals connate, pinkish, and lined with purple at the base. It is named after the Hon. P. Leys, M.B., late Col.-Surgeon of Labuan.—*Journ. Hort. Soc.*, xvii., Proc., pp. 134, 135, fig. 19.

DENDROBIUM M'GREGORII, F. Muell. & Kränzl.—A species of the section Dendrocoryne, said to have racemes of three or four flowers of the size of D. bigibbum or D. Phalænopsis. The sepals and petals are white, the latter with a rose-purple line, the side lobes of the lip purple, and the front lobe yellow with some purplish veins. It is not in cultivation, being described from a dried specimen, and nothing is stated as to its habitat.—*Gard. Chron.*, Sept. 15th, p. 306.

DENDROBIUM METTKEANUM, Kränzl.—Described as a peculiar Dendrobium, very near to D. nitidissimum, Rchb. f., belonging to the Diplocaulobium group. The flowers are pale rose-coloured. It was introduced by Messrs. F. Sander and Co., of St. Albans, through their collector, Micholitz.—*Gard. Chron.*, Sept. 15th, p. 306.

CATASETUM MACROCARPUM LINDENI, O'Brien.—A variety which was imported by Messrs. Linden, L'Horticulture Internationale, Brussels, with Catasetum Bungerothii. The inside of the lip is a little darker, and the mouth of the same a little more open than usual.—*Gard. Chron.*, Sept. 15th, p. 306.

NOTES ON THE FERTILISATION OF ORCHIDS IN THE TROPICS.

NUMEROUS observations respecting the fertilisation of Orchids, both in a wild and cultivated state, have been recorded, and the following notes from Costa Rica may therefore be of some interest :—

The Orchids of my large collections, although cultivated in the open air, and therefore exposed to all possible insect and other agencies of fertilisation, in most cases fail to produce seed pods, though in a few kinds they do it exceptionally, but always in a much less degree than in their true native homes. For example, Cattleya Dowiana in its native habitat produces a seed pod almost out of every flower; here in San José—about fifty miles from its home—I had last April nearly four hundred plants in perfect flower, but although the air above them was humming with bees, they produced not one seed pod, except a few plants which I fertilised artificially with pollen of C. Mossiæ.

Bees play a very insignificant part in the fertilisation of Orchids here. I keep in my nurseries an apiary averaging a hundred hives of Italian bees, together with a few colonies of different kinds of native stingless bees. The hives are placed in long rows alongside an orchard of oranges and other fruit trees, giving different grades of shade to the large collections of native and foreign Orchids I am cultivating beneath them. Now although I am almost every day among the Orchids, and although daily perhaps a million bees are flying straight across the Orchid garden, yet during all these years I have seen scarcely a dozen bees alight on Orchid flowers, and among these few not one touched the pollen-masses, much less carrying them to the stigma. Yet I remember perfectly well that in European stoves it is no rare occurrence to see bees alighting on Orchid flowers. I myself have seen it several times, and although I at that time took little care to see if fertilisation really took place, I have little doubt that it did.

Most Orchids seem to have each species its own fertilising insect, which must in most cases be of a very restricted local occurrence, and without which the respective Orchid, even under quite identical climatic conditions, may thrive and flower individually, but without propagating itself. And this explains at once the truly surprising local distribution of the majority of Orchids, and also the yet more surprising fact, that certain species are found in very far distant localities. Thus Oncidium Kramerianum at Guyaquil in Ecuador, and again in Port Limon in Costa Rica; Cypripedium caudatum in Chiriqui, Colombia, and again in Peru, &c.

That the above conclusions are not mere theories is sufficiently proved by the sterility of my cultivated Orchids, in proof of which I may state the following observations, out of a good many more which I could give :—

Epidendrum Pseudepidendrum, an extremely rare plant, grows at Bugaba, in Chiriqui, occupying an area of less than two miles diameter, and there it fruits regularly. Once I found a single and unique specimen of it at Potrerillos, some fifteen miles from Bugaba, whose big dimensions and freedom of flowering showed that the climate of Potrerillos was even more congenial to it than that of Bugaba; but the numerous flowers of that specimen never became fertilised, although the locality was full of native bees. And so it is with the rare Odontoglossum Krameri, which grows in a very restricted locality in Chiriqui, and again one hundred and fifty miles off in Costa Rica. The two or three unique and isolated specimens I found of it far off from their natural spots were always sterile. Such was also the case with Odontoglossum chiriquense, Rchb. f., of which I discovered the first and quite isolated specimen ten miles away from its very restricted natural habitat.

As to which particular insects fertilise the commoner Orchids of Costa Rica, I can say very little—in fact, it is a much more difficult matter than it looks; and while I doubt not that with time I can discover a few or perhaps many of them, yet it will be a long and weary task, and I am no longer a young man. My business obliges me to remain almost constantly at my nursery establishment, and on my now rather rare personal explorations I feel (quite contrary to my younger years) always somewhat uncomfortable until I can return home, and, therefore, I am not too anxious to prolong my journeys with scientific researches. At home at my nurseries, however, I spend much more time and care in such investigations; but the fact is that the surroundings of our capital are as thickly populated as is the average of England, and remarkable wild growing Orchids are near here nearly as scarce as they are near London, and therefore the chance of discovering the certainly very scarce and always local insects, that do the work of fertilisation in their respective districts, is of course very little.

I trust that sooner or later both myself and others may be able to communicate some more observations, which will throw further light on this interesting problem.

San José de Costa Rica. RICHARD PFAU.

CATTLEYA GASKELLIANA ALBA.

This beautiful albino has recently flowered in several collections, and a charming and very fragrant Cattleya it is, as is well illustrated by a flower sent from the collection of W. Thompson, Esq., Walton Grange, Stone, Staffordshire, by Mr. Stevens. When Reichenbach described it in 1888, he remarked that it might be distinguished from the variety albens by its

purity of colour, and the absence of any rosy flush in the flower, the only colour being the light yellow disk; but now that so many plants are in cultivation it is doubtful whether so sharp a line can be drawn between them. Albinos of this Cattleya appear to be rather more common than of some others of the labiata group.

DIES ORCHIDIANÆ.

On more than one occasion I have called attention to confusions in nomenclature. The other day picking up my *Lindenia* I observed a Cypripedium × Gibezianum, a hybrid between C. venustum and C. villosum, which I have long known under another name. Several other instances could be pointed where the same hybrid has received two or more different names, and I think it is quite time some effort was made to check this unnecessary multiplication of names. A varietal name could easily be added to indicate any difference from the original type, but in several recent instances where new names have been imposed even this addition would have been unnecessary, the plants possessing no appreciable difference from older hybrids.

The question is—Where are we going? Among the thousands of seedlings I see everywhere a large number are from identical crosses, and unless great care is taken the confusion will become ten times worse than it is already, and even now it is bad enough. I hope the Orchid Review will exert its influence in checking this unnecessary increase of synonyms.

A discussion has recently taken place as to whether Cattleya Trianæ or Trianæi is the correct spelling, both methods finding advocates. The question seems to me an exceedingly simple one, as the word Triana requires no change of termination in latinising. The nominative singular is Triana, and the "a" must be changed into "æ" in the genitive—thus Triana's Cattleya becomes Cattleya Trianæ. Strangely enough one writer on the question says, "Not all the customs of the English can make Trianæi correct." But why saddle the English with the error? It was Reichenbach who originated it, though there are some who still follow the error. By the way, the Orchid Review has never adopted the erroneous method.

And now I am on the subject I may mention that there is one mistake which some of our Continental friends almost invariably make, and that is, in uniformly using a single "i" in the genitive, whether the nominative ends in "us" or "ius." It is correct for all names which are latinised by

the addition of "us," which becomes "i" in the genitive; but it is equally incorrect for those ending in "ius," which in the genitive is changed to "ii." Thus Low is latinised Lowius, which becomes Lowii in the genitive, yet the Belgians habitually spell the word Lowi, which is just as incorrect as Skinnerii would be for a word which is latinised by the addition of "us." I have no intention of writing a disquisition on Latin, but now that the question has turned up it is just as well to allude to it, because there seems to be much uncertainty in the matter.

The Royal Horticultural Society have a rule which sets forth that "Exhibitors showing, for the first time, a plant under a Latin name, should be required to furnish the name of the botanist who has described the plant." And another to the effect that, "The Orchid Committee should decline to recognise any unauthorised name." The other day I see that they gave an Award of Merit to a plant under the name of Bletia Watsoni, and a contemporary records it as a "Nov. sp." Your report, however, calls it Bletia catenulata, which was described a century ago, and if so, I want to know who is the botanist that described this old plant under a new name?—and I am assured that it is actually the original species of the genus. The only definite record I can find is the one mentioned above, though I am not sure if the obvious conclusion is a safe one. Some time previously I observed Vanda Rœblingiana recorded as a "Nov. sp.," also without the name of the botanist who described it, though from the report of other contemporaries it is evident that Messrs. Low furnished the information. This time, however, they fail to throw any light on the subject. Perhaps the rule is widely honoured—in the breach.

Some time ago I had occasion to call attention to a magnified figure of a flower of Odontoglossum crispum apiatum which appeared in the *Gardeners' Chronicle*, and now another occurs under the name of O. c. mirabile. The flower is represented as four inches in diameter across the petals, which themselves are one and an eighth inches broad. Now this is the very O. × Coradinei mirabile of which a description appears at p. 198 of these pages, whence I learn that the flower measures three inches across the petals, which organs are two-thirds of an inch broad. Where is the need for this exaggeration? I suppose the block will soon reappear elsewhere, for already I see two reproductions of the misleading figure of O. c. apiatum, and in one case side by side with correct figures of other varieties, which look dwarfed and insignificant in comparison. Of course there is no word of explanation to put people on their guard, and I think it is time to protest against this sort of thing, as exaggerated and misleading figures of Orchids are becoming far too numerous.

ARGUS.

CATTLEYA WARSCEWICZII.

SEVERAL inquiries have reached us respecting this splendid Cattleya and its varieties, from which it is evident that much uncertainty exists respecting it, and therefore the following notes may be acceptable. It was originally discovered about the year 1848 or 1849, by Warscewicz, in the province of Medellin, New Granada; and in 1854 was fully described, from dried specimens and drawings, as Cattleya Warscewiczii (*Bonplandia*, ii. p. 112), being named by Reichenbach in honour of its discoverer. A magnificent four-flowered raceme and coloured drawing also came into the hands of Dr. Lindley. Immediately afterwards Reichenbach figured it in his *Xenia Orchidacea* (i. p. 78, t. 31), but, unfortunately, in the text he confounded it with C. Trianæ, to which species the living plants mentioned evidently belong. The greater part of Warscewicz's collection was unfortunately lost, by the breaking down of the vessel in which it was being conveyed down the river Magdalena, and the few plants that were saved subsequently died.

For a long time afterwards the species seems to have been almost lost sight of, but in 1868 it was re-discovered by M. Gustav Wallis, when travelling from Medellin to Frontino, and plants were sent to M. Linden, of Brussels. Wallis records its habitat (*Gard. Chron.*, 1875, i. p. 171), as in the immediate vicinity of the little town of Frontino, in the state of Antioquia, at about 4,000 feet elevation, where it grows in thick forests, and also in the tops of high trees, the best-flowered plants being found in rather shady situations. It flowered, doubtless for the first time in Europe, in M. Linden's establishment in 1873, and received the name of Cattleya gigas, Linden (*Ill. Hort.*, xx. p. 70), a figure being subsequently published (*l.c.*, xxi. p. 122, t. 178).

Published statements with regard to the origin of C. gigas are conflicting. Wallis, who complained that his merits as discoverer had been ignored, affirms that he sent plants from Frontino to M. Linden, while others say that Roezl obtained it from Medellin, whence Warscewicz's original specimens were obtained. Wallis himself throws some light on the point, for he states that in 1871 Roezl was sent to collect plants on behalf of M. Linden, and that many of them were obtained at Amalfi (north of Medellin), more than eighty miles from Frontino, on the other side of the Cauca valley, where he himself had collected them, and that he was doubtful if they were the true C. gigas, as he considered them different from the Frontino plant. He further states that three times he sent plants to M. Linden and Messrs. Veitch, of Chelsea.

The Frontino plant subsequently received the name of C. imperialis in gardens, and was said to grow and flower very freely, while the Medellin one had the character of being so shy a bloomer that the locality had been all but abandoned by collectors.

Still later it was discovered in a new locality, on the mountains to the east of the Magdalena River, by a collector of Messrs. F. Sander and Co., of St. Albans, and received the name of C. Sanderiana, plants being sold at Stevens's Rooms on June 15, 1882. This also has the credit of being a free bloomer.

Thus the species exists on all three Cordilleras, the typical C. Warscewiczii occurring on the central one, from Amalfi southwards to beyond Medellin, the variety imperialis on the western, near Frontino, and the variety Sanderiana on the eastern, from La Palma to beyond Flores. These names are given in the sense in which they were applied, but it is doubtful if any distinguishing characters can be pointed out. In fact this Cattleya is much less variable that several others, and the character of being a shy bloomer is said not to be peculiar to plants from the central Cordillera, but to depend to a great extent on the conditions under which it grows. In any case C. Warscewiczii includes the other forms, and is by far the older name of this magnificent Cattleya.

DENDROBIUM PHALÆNOPSIS AT CHELTENHAM.

Orchids are grown well at Cheltenham. On a recent visit I saw a sight at the Royal Exotic Nurseries worth going a long way to see. Mr. James Cypher has long been justly famed for excellence in Orchid culture, and, perhaps, so far as Dendrobiums are concerned, he has no equal. Amidst the verdure of one of the most fertile counties, and nicely sheltered by the surrounding hills, are Mr. Cypher's Orchid Houses, and there, indeed, Dendrobiums are at home. At this early date there are already nearly fifteen hundred blooms of the handsome Dendrobium Phalænopsis fully expanded, which are all arranged in one house, and as the colours vary from the darkest forms to almost pure white, the effect can be better imagined than described. Beautiful as the varieties are, there are yet those to come forth that will favourably compare with some of the original paintings, which, as is the case with many another Orchid painting, cast just a faint suspicion of the exaggerative powers of the artist.

H. A. B.

ODONTOGLOSSUM HARRYANUM.

A very fine form of this beautiful Odontoglossum comes from the collection of W. E. Ledger, Esq., Wilton Road, Wimbledon, in which the lip is fully one and a quarter inches in diameter, and the dorsal sepal well marked with deep yellow. It may be considered a well grown example of the typical form. The petals of this fine species are so much incurved, and stand forward in front of the flower in a way which detracts considerably from its beauty, as has been pointed out to us on various occasions. This arises from the fact

that the petals are very concave near the base. But the fault may be very easily remedied, by placing one finger at the back of the petal and the thumb at the front and carefully bending it, so as to make the concave surface convex, after which the beautiful veining is no longer hidden. There are two very distinct varieties of this fine Orchid; flavescens (Rolfe in *Gard. Chron.*, 1889, ii. p. 38), in which the whole of the maroon-purple has vanished, leaving the flower a most beautiful yellow, and another in which the sepals are almost wholly suffused with blackish purple, an unusually dark form to which the name of var. tenebrosum is specially applicable.

CATTLEYA ELDORADO.

Quite a number of flowers of this charming Cattleya have recently been received, with inquiries respecting them, and the following notes will doubtless prove interesting, especially as its early history has not been recorded. It is usually said to have been first introduced by M. Linden, about the year 1866, but it really appeared in cultivation thirteen years before this. It flowered in the collection of Mr. Hadwen, of Liverpool, in May, 1853, when a flower was sent to Dr. Lindley, with the information that it had been obtained from "Barra do Rio Negro." This appears to have been the original appearance of the species, though it did not receive its name until many years later.

M. Linden's plants were collected by Gustav Wallis, who, in 1866, explored the low-lying district where the waters of the Rio Negro pour into the Amazon. Here he obtained the Cattleya, and sent plants to M. Linden, at Brussels, which flowered during 1867, and one of the first was exhibited at Paris under the name of Cattleya Eldorado. It remained scarce until 1876, when M. Binot, a French collector, sent an importation home. Some varieties soon appeared, for in 1868 both C. E. rosea and C. E. splendens received First-class Certificates from the Royal Horticultural Society when exhibited by M. Linden. The former had flowers of a more rosy hue than the type, and the latter, again, differed in having some deep rose-purple round the front of the lip. In 1876 a white form appeared, which was called variety virginalis, and a very similar form received the name of Cattleya Wallisii in 1882. A year later the variety ornata was described, its chief peculiarity being the presence of a rose-purple blotch at the apex of the sepals. The one called crocata appeared in 1886, and is characterised by having the disc of the deep orange, and prolonged in a line to the base of the lip. More recently some other forms have received varietal names. In 1877 the species was again described by M. Barbosa Rodrigues as C. trichopiliochila (as pointed out at p. 206), in allusion to a supposed resemblance in the lip to that of a Trichopilia. It usually flowers during July and August.

As regards its culture, it should be borne in mind that C. superba grows in the same region, which is low-lying, and the climate hotter and with a more decided alternation between the wet and dry seasons than where some of its allies grow. Consequently these two species succeed best under a little warmer treatment. It is also interesting to note that the natural hybrid C. × Brymeriana occurs where C. Eldorado and C. superba grow together, these being its two parents, and the hybrid naturally requires the same treatment.

CATTLEYA ELONGATA.

This, as pointed out at p. 206, is an older name for C. Alexandræ, having been described in a work published at Rio de Janeiro in 1877, though nothing was known about it in Europe until recently, and eight others described by the same author have proved synonymous with previously described species. C. elongata, however, must be recognised now that its identity is known. The species is now common in cultivation, and as it is becoming established should flower better this autumn. A plant of the rose-coloured variety in the Orchid house at Kew is bearing a raceme of four flowers, and is very effective. It is certainly a very attractive Cattleya as seen in its best forms, and the undulate petals give it a very distinct appearance, and when it becomes strong enough to produce racemes of ten flowers, as in the wild dried specimens, it will be worth seeing. We have not yet heard of one with anything like this number of flowers, for, of course, the published figures are made up with the help of dried specimens.

SATYRIUM CANDIDUM.

A very interesting and beautiful species of Satyrium has recently flowered, both in the collection of H. J. Elwes, Esq., Andoversford, Gloucestershire, and at Kew. It is Satyrium candidum, Lindl. (*Bot. Reg.*, xxiv., Misc., p. 82). The species was originally described in 1838, from plants brought home by Sir John Herschel, from the Cape of Good Hope, which flowered in his garden at Regent's Park during October of that year. It was recorded as having pure white flowers, emitting a most delightful aromatic fragrance, and the sheaths of the stems inflated and so grown together as to form a kind of cup, capable of holding water. These characters apply equally well at the present time.

Several other species of the genus are now cultivated in a few collections, and it is very interesting to find that these pretty little plants are again receiving attention, for they are very attractive when in flower, and succeed well in a greenhouse or cold frame. Cape Orchids generally have received more attention during recent years, and a very interesting little group of them could now be got together.

NOMENCLATURE OF HYBRID CYPRIPEDIUMS.

I OBSERVE a note in the last number of the ORCHID REVIEW (page 275), in which you have suggested an alteration in the name of Mr. Statter's hybrid Cypripedium, from C. × Excelsior to C. × excellens, on the ground that there is already a C. × Excelsior in the collection of M. Jules Hye, with parentage Druryi × Spicerianum. We have had this latter cross here for several years under the name of C. × Buchanianum. It was raised by Mr. Osborne in the collection of the late Mr. Buchan, of Southampton. I saw a plant in flower that M. Jules Hye had over here, our plants being in flower at the same time, and I told him then that the two were identical. I quite agree that it is very confusing to have two plants from different parents under the same name, and it is equally so when different names are given to plants having the same parentage. In the present case, however, I think you overlooked the fact that the earlier C. × Excelsior is synonymous with C. × Buchanianum, or you would not have suggested the change of name.

It is surprising what a number of hybrid Cypripediums have received different names, where the same parents have been used, and unless very great care is taken in the future things will get more mixed than ever, with so many seedlings cropping up around us. There was an instance before the Orchid Committee of the R. H. S. on August 11th, where a plant shown as Cypripedium × Metèor, was determined to be a variety previously shown as C. × Charles Richman (C. bellatulum × barbatum superbum), though the superior merits of the latter gained for it a First-class Certificate.

There are, I am sorry to say, instances in which the Orchid Committee have given awards to plants which have previously been before them under other names, and recognised under both, though the parentage has been the same. I quite agree with you that varietal distinction should be recognised in the case of seedlings which are distinct or superior to the original form, as in the case of C. × Harrisianum virescens, and others.

H. CHAPMAN.

Cambridge Lodge, Camberwell.

[Mr. Chapman is quite right in supposing that the facts he points out were overlooked, or the change would not have been proposed. The nomenclature of hybrids generally was considered in some detail at p. 340 of our last volume, and three other correspondents have written strengthening our hands in this matter. The case of Cypripedium × Charles Richman emphasises one of our suggestions. Had it been called C. × Richmanii the varietal name superbum (or any other) could have been added, if necessary. But some of the hybrids which have received different names are not worth distinguishing, even as varieties.—ED.]

WARSCEWICZELLA AMAZONICA.

Another of Warscewicz's long-lost species has come to light, and a very handsome one too. It is the old Warscewiczella amazonica which was described as long ago as 1854, from a specimen collected near the sources of the River Marañon on the Upper Amazon, by Warscewicz, in May, 1853. It was described as having flowers twice as large as those of W. discolor, and snow white with some red veins in the middle of the lip. Then comes a long blank of nearly forty years, during which period nothing further seems to have come to light respecting it. In 1892, however, a plant flowered with Messrs. Linden, L'Horticulture Internationale, Brussels, to which a First-class Certificate was awarded by the Royal Horticultural Society under the name of Warsewiczella Lindeni. It is hardly necessary to add that nothing was stated about its origin, either then or afterwards when it was figured in the *Lindenia*. Now, however, plants have been obtained by Mr. E. S. Rand, of Pará, from the Upper Amazon, which are not only identical with the supposed novelty but with the old plant, which, as already remarked, has been quite lost sight of. Of course the old name must now be recognised. It is marvellous that so fine a plant should have remained unknown in cultivation for so long a period after its discovery. With regard to calling the plant a *Zygopetalum* a word may be said. It was Reichenbach who reduced Warscewiczella and several other genera to Zygopetalum, and others have followed him without question, though several other genera might also be included on just as good grounds. The following are the references to descriptions and figures :—

Warscewiczella amazonica, Rchb. f. and Warscew. in *Bonplandia* ii. p. 97.
Zygopetalum amazonicum, Rchb. f. in *Walp. Ann.*, vi. p. 655.
Warscewiczella Lindeni, *Journ. of Hort.*, 1892, i. pp 449, 461, fig. 79.
Zygopetalum Lindeni, Rolfe in *Lindenia*, viii. p. 5, t. 337 ; *Gard. Chron.*, 1893, ii. p. 493, fig. 85.

R. A. R.

REICHENBACHIANÆ.—"Authors should do more than secure to themselves the right of priority . . . by such incomplete diagnoses. Not only should a careful description be taken, but great care should be taken to help posterity in discriminating the species. Therefore that specimen, or those specimens, which furnished the evidence for the establishment of the species should be distinctly marked as 'the type of my species.' I now always do this in my collection. I regard this as a *fidei commissum* for my lifetime that will have to be distinctly kept within reach of the men of science after my death."—Reichenbach in *Gard. Chron.*, 1879, ii. p. 718. And yet the man who could write this has sealed up his herbarium for a quarter of a century.

A GROUP OF ODONTOGLOSSOMS.

OUR August number contained a portrait of a group of four very handsome varieties of Odontoglossum, which were exhibited and received awards at the last Temple Show, and we now have pleasure in giving four other striking forms, which were also exhibited at the same time, the photograph, as before, being kindly taken for us by H. Little, Esq., of The Barons, Twickenham. The flowers are represented two-thirds natural size.

O. CRISPUM XANTHOTES (Fig. 29) is a pure white form with the exception of the disc of the lip which is deep yellow, while each sepal has usually a

Fig. 29. O. CRISPUM XANTHOTES. Fig. 30. O. × ANDERSONIANUM VAR.
Fig. 31. O. × A. SUPERBUM. Fig. 32. O. × HORSMANII.

few similar spots in the middle. This character, however, is somewhat variable, and in the flower here represented, two of the sepals are, like the petals, unspotted. The yellow spots come out dark in the photograph. The plant is in the rich collection of Baron Sir Henry Schröder, The Dell, Egham, and received a First-class Certificate at the Temple Show. It is figured at t. 312 of the *Lindenia*.

O. × ANDERSONIANUM, Hazelbourne variety (Fig. 30) is a very pretty

form with broad segments, which was included in the group exhibited by Welbore S. Ellis, Esq., Hazelbourne, Dorking, at the Temple Show. The arrangement of the blotches is very curious, as one side of the flower is nearly pure white, while the other is heavily blotched with reddish purple. The peculiarity extended to other flowers on the raceme, and may perhaps be constant.

O. × ANDERSONIANUM SUPERBUM (Fig. 31) is a variety with long and rather narrow segments, from Baron Schröder's collection, which received a First-class Certificate at the Temple Show. The ground colour of the flower is white with a rosy flush on the sepals, and the blotches reddish purple. It differs much in shape from the preceding, and thus the two figures serve to illustrate a little of the wide range of variation seen in this remarkable natural hybrid, for a full account of which the reader is referred to pages 170–174 of our last volume. The present form approaches O. gloriosum in shape, while the preceding is much nearer to O. crispum, yet both are natural hybrids from the two species in question.

O. × HORSMANII (Fig. 32) was also included in Baron Schröder's splendid group at the Temple Show. It is the rare and beautiful natural hybrid from O. luteopurpureum and O. nobile (Pescatorei) which was considered in detail at pp. 139, 140 of the present volume. The flowers are ivory white, beautifully spotted with cinnamon-brown, and quite intermediate in shape, and in the details of the lip and column. The flower here figured measured exactly three and one-eighth inches from tip to tip of the petals.

ODONTOGLOSSUM × ANDERSONIANUM, YOUNG'S VARIETY.

This is the very distinct and handsome variety from the collection of C. Young, Esq., The Thorns, Sevenoaks (gr. Mr. Ryder), which received an Award of Merit at the Temple Show. A flower sent to us was unfortunately received with one of the petals broken off, otherwise it would have been included in the above group. It is very remarkable, both in shape and colour. The flower measured two and three-quarter inches across the petals, which were three-quarters of an inch broad, and the sepals scarcely narrower, the colour ivory white with both sepals and petals richly spotted with deep cinnamon-brown, the blotches being arranged in concentric zones on their basal two-thirds. The lip has one large blotch in front of the crest and a few small ones at the sides. The lip, like the sepals and petals, is shorter and broader than in most forms of O. × Andersonianum, though it otherwise agrees both in shape and in the details of the crest. The raceme only bore five flowers, so that this remarkable variety will probably improve as it becomes stronger.

CATTLEYA CHOCOENSIS AT HOME.

THE habitat of this handsome Cattleya is confined principally to a narrow strip of territory extending along the Rio Cauca, in the State of Cauca, Columbia, between the fourth and fifth degree northern latitude, and at an elevation of 3,000 feet above sea level. Here these Cattleyas grow in forests, on level land to a great extent marshy and at times inundated, consequently the moisture the plants receive throughout the year is considerable. The evaporation of the stagnant water through the influence of the heat transforms it into a light mist, which finds its way upward among the trees and branches on which Cattleya chocoensis grows. The trees in this region are of a short and stunty growth, and they are mostly covered with decayed matters and vegetation of every description. This Orchid luxuriates in this locality; oftentimes the trunks and the numerous branches are literally covered with the plants in all imaginable positions. The spectacle presented during the flowering season is indescribable.

The best season for collecting this Orchid is in August and September, it being then in flower, and consequently the bulbs are then in good condition for shipment. The collecting of this plant is, however, somewhat difficult; the localities in which it grows are often destitute of habitations, or, at best, they are far between, causing inconvenience in securing help, provisions, and means of transportation, the latter being expensive.

The Cauca River is only navigable for a short distance above its confluence with the Rio Magdalena. On account of these inconveniences, Orchids collected higher up this river have to be carried across the hot Cauca valley and the Western Cordillera to the Pacific coast, whence they are easily shipped to any part of the world.

In growing this Cattleya its fondness for moisture at the roots should be borne in mind, particularly during its growing season; and when at rest the atmosphere should be kept as damp as possible.—JOHN E. LAGER, in *Florists' Exchange*.

CYPRIPEDIUM CURTISII.

A statement appears in *Le Jardin* for August 5th last (p. 171), by M. Leon Duval, that Cypripedium Curtisii has been artificially raised by M. Alfred Bleu, the well-known hybridist of Paris, from C. ciliolare and C. superbiens, thus proving it to be a natural hybrid between these two species. The plant was exhibited by M. Bleu in 1893, when something like the following dialogue took place. "What a beautiful Cypripedium Curtisii!" exclaimed M. Duval. "Is it not?" replied M. Bleu. "Ah, well! it is my child, obtained by crossing Cypripedium ciliolare with the pollen of C. superbiens." "Impossible!" ejaculated the former speaker. "But it is a fact," again replied the hybridist, "and proves that C. Curtisii is only a natural

hybrid." M. Duval pointed out as another objection that while C. ciliolare was imported in quantity, and C. Curtisii in numbers scarcely less, C. superbiens had only appeared once, and then only one or two plants. The reply was ingenious, namely, that importers were not so simple as to import in quantity a plant which they can propagate by division and sell at a good price. Now we have one or two remarks to make. Cypripedium ciliolare is a Philippine species, C. superbiens is a little doubtful, though generally supposed to be from Malacca. Owing to the doubt about the latter we will put aside all questions about the difficulty of transit of the pollen, but we ask how is it that the reputed hybrid comes to grow hundreds of miles away, in Sumatra? The fact is some mistake has been made, though we cannot suggest what it is. Considering the amount of resemblance between the two reputed parents, the most plausible explanation is that the hybrid has been mistaken for Curtisii, but others will readily suggest themselves. Will M. Bleu kindly send us his next flower of the hybrid? The question should be cleared up. If some one were to suggest that C. superbiens was a natural hybrid, the chief difficulty would be to account for its parentage, for the Malacca habitat seems open to question, and we know it has been searched for there.

STAUROPSIS PHILIPPINENSIS.

This very interesting Philippine species has at last appeared in cultivation, having flowered under the care of Mr. G. E. Day, Orchid Gardens, Hazelwood, King's Langley, Herts. It was found growing in a native basket with Aërides quinquevulnera, some other Philippine species being received at the same time. It was originally collected by Cuming, and was described in 1845 by Lindley, in the *Annals of Natural History* (xv. p. 386) under the name of Trichglottis philippinensis. In 1860 Reichenbach transferred it to a new genus under the name Stauropsis philippinensis (*Hamb. Garteng.*, xvi. p. 117), Trichoglottis pallens, Lindl., also being added at the same time, though this has since been transferred to Phalænopsis. The present species has an erect, climbing, leafy stem, which produces roots at intervals, the leaves being elliptical-oblong in shape and about one and a half inches long. The pedicelled flowers are solitary in the axils of the leaves, and rather smaller than those of Phalænopsis violacea. The sepals and petals are bright red-brown, and the lip purple on the sides, the rest being nearly white. A hairy keel runs down the centre of the fleshy lip. It is apparently now introduced for the first time—at all events in 1872 Reichenbach spoke of it as "not seen by the recent Orchid-gathering tourists, who did the Philippines generally, smoking Manilla cigars at home and commanding Orchids from the inhabitants;" and I know of no recent records. About eight species are now included in the genus.

R. A. R.

THE HYBRIDIST.

Cypripedium × James H. Veitch.

More remarkable and distinct hybrid Cypripediums than those in whose parentage Cypripedium Stonei has participated can scarcely be found amidst the host of forms brought into existence by the industry of the hybridist. Foremost among them is C. × Morganiæ, raised from C. superbiens ♀ and C. Stonei ♂, and now to be seen in several varieties, all of which, however, are surpassed, from a florist's point of view, by the variety langleyense, in which C. Stonei platytænium takes the place of the species as pollen parent. This was the first hybrid to flower in which that remarkable "sport" was used, but now another and still more striking one has been obtained, from C. Curtisii fertilised with the pollen of the same glorified variety of C. Stonei, and which received a First-class Certificate when submitted to the Orchid Committee of the Royal Horticultural Society on Tuesday, August 28th, under the name of C. × James H. Veitch. On superficial view the new hybrid has a considerable resemblance to C. × Morganiæ, but a closer inspection reveals the presence of characters, especially in the upper sepal, lip, and staminode, evidently derived from C. Curtisii, which clearly distinguish it from the older hybrid. The dorsal sepal is two and a half inches long, elliptical-ovate, ciliolate, pale green passing into white at the margin, folded at the mid-vein, where there is a purple line extending almost to the apex; on each side of this are about six longer purple lines, alternating with six shorter and thinner, symmetrically curved ones. The petals are broadly ribbon-like, pendulous, four and a half to five inches long, and about an inch broad, ciliate with dark red-brown hairs of various lengths; light yellow, and rather evenly spotted with dark red-purple warts, except near the apex. The lip is two inches long, helmet-shaped, compressed laterally, and almost uniform red-crimson, with the infolded side-lobes paler but dotted with darker warts. The staminode is transversely oblong, pubescent, with two blunt cusps in front and a small rounded tooth between them; the colour pale yellow with some green reticulations in the centre. It is scarcely necessary to add that this fine hybrid was raised by Mr. Seden in the Veitchian establishments at Langley, near Slough.

A. H. K.

Cypripedium × W. R. Lee.

This is a large and handsome hybrid from the collection of William R. Lee, Esq., Beech Lawn, Audenshaw, Manchester, which received an Award of Merit from the Royal Horticultural Society on August 14th last, of which the two-flowered raceme has been kindly sent by Mr. Lee. Its parents, as has already been pointed out, are C. superbiens ♀ and C. Elliottianum ♂ (the atter being only a form of C. Rothschildianum). It bears unmistakable

evidence of its descent, combining well the characters of the two parent species. The dorsal sepal is broadly ovate, over two inches across, and the ground colour very light with about twenty-five purple-brown stripes. The petals are spreading, three and three-quarter inches long by over three-quarters of an inch broad, spotted almost to the apex with purple-brown on a very light ground, and beautifully ciliate with long hairs. The lip is two and three-quarter inches long, by seven-eighths of an inch broad, and suffused with purple-brown in front, while the staminode is nearly orbicular, with a pair of acute teeth at the apex, reticulated with green in the centre, on a very light ground, and very pubescent. The leaves show much of the influence of the pollen parent, from which also the longer two-flowered scape, longer more spreading petals, and more elongated lip are derived. It has the vigorous habit of C. Rothschildianum, from which we anticipate a series of brilliant hybrids in the near future. The present one is certainly a plant of sterling merit.

Lælio-cattleya × Parysatis.

Cattleya Bowringiana is an extremely promising plant for the hybridist, being both free growing and very floriferous. At p. 144 we gave an account of a very handsome hybrid raised between it and C. Warscewiczii by Messrs. James Veitch and Sons, of Chelsea, and now another must be added to the list. In the present instance Lælia pumila was the pollen parent, and its influence is very marked. A note from Mr. Seden says that the seed was sown in 1888, and the first flower was produced in 1893. The plant is about six inches high, and has six pseudobulbs, four of which are diphyllous, like the Cattleya parent. The flowers are about intermediate in shape, the petals two inches long by one and a quarter broad, and the lip open, as in the Lælia parent, though it becomes more convolute as the flower becomes old, in which is seen the influence of the other parent. The sepals and petals are of a beautiful bright rose-purple, and the front half of the lip deep magenta-purple, with a pale throat. It is a very charming little plant.

Cypripedium × Nandii.

This is the very pretty hybrid from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), which received an Award of Merit from the Royal Horticultural Society on September 11th. It was obtained from C. callosum ♀ and C. × Tautzianum ♂, and is fairly intermediate in character. The dorsal sepal is two and a quarter inches broad by two inches long, and the disc veined with light green, which passes into feathered purple nerves before reaching the margin, which itself is white. The petals are two and a half inches long by three quarters of an inch broad, the base light green, the remainder suffused with light rosy

purple, and the whole covered with many small purple-brown dots. The front of the lip is bright red-purple, this organ being two inches long. The staminode is broadly rounded, with two cuspidate teeth in front, very flat, and with a zone of colour, formed of a suffusion of purple and green, between the pale centre and margin.

CYPRIPEDIUM × JANET ROSS.

On two occasions we have received from H. J. Ross, Esq., Poggio Gherardo, Florence, Italy, a hybrid Cypripedium bearing the above name. It was derived from C. × Swanianum ♀ and C. × Harrisianum ♂, so that its parentage may be expressed thus: C. barbatum ½, C. villosum ¼, C. Dayanum ¼. It is moist like C. × Swanianum in shape, the dorsal sepal being ovate and one and a half inches broad, with about nineteen green lines on a white ground, slightly suffused with very light purple, except at the margin. The spreading petals are two and three-quarter inches long, ciliate, very light purple veined with light green. The lip is two and a quarter inches long, and of a dull light purple in front; and the staminode nearly orbicular with blunt teeth, and reticulated with green on a light ground. The leaf is light shining yellowish-green, beautifully reticulated with deep green. The characters of C. villosum are least apparent in the flower.

ORCHID PORTRAITS.

AËRIDES QUINQUEVULNERUM, Lindl.—*Orchid Album*, t. 495.

CATASETUM MACROCARPUM VAR. LINDENI, O'Brien.—*Journ. des Orch.*, Sept. 16, pp. 206, 207, fig. 76.

CATTLEYA ACLANDIÆ, Lindl., VAR. MAXIMA, Hort.—*Lindenia*, t. 421.

CATTLEYA GIGAS, COUNTESS OF DERBY.—*Journ. of Hort.*, Sept. 20, pp. 274, 275, fig. 40.

CATTLEYA TRIANÆ, Lind. and Rchb. f., VAR. CAPARTIANA, L. Lind.—*Lindenia*, t. 426.

CŒLOGYNE SPECIOSA, Lindl.—*Orchid Album*, t. 494.

CYMBIDIUM EBURNEUM, Lindl.—*Lindenia*, t. 422.

CYPRIPEDIUM × CHARLES RICHMAN.—*Gard. Mag.*, Sept. 15, p. 549, with fig.

CYPRIPEDIUM × CHLONIUS.—*Gard. Mag.*, Sept. 8, p. 535, with fig.

CYPRIPEDIUM × GIBEZIANUM, L. Lind.—*Lindenia*, t. 425.

CYPRIPEDIUM × JAMES H. VEITCH.—*Journ. of Hort.*, Sept. 6, p. 227, fig. 33; *Gard. Chron.*, Sept. 8, p. 287, fig. 40.

CYPRIPEDIUM × LEYSENIANUM.—*Rev. L'Hort. Belge*, Aug., p. 169, with coloured plate.

CYPRIPEDIUM STONEI PLATYTÆNIUM.—*Orchid Album*, t. 496.

CYPRIPEDIUM SUPERBIENS. A flower with two lips.—*Gard. World*, Sept. 15, p. 41, with fig.

DISA NERVOSA.—*Gard. Chron.*, Sept. 15, pp. 308, 309, fig. 41.

HABENARIA SUSANNÆ.—*Journ. of Hort.*, Sept. 6, pp. 227, 228, fig. 32; *Gard. Chron.*, Sept. 8, pp. 278, 279, fig. 38.

LÆLIO-CATTLEYA × BROOMFIELDENSIS.—*Journ. of Hort.*, Aug. 23, pp. 170, 171, fig. 25; *Gard. Chron.*, Aug. 25, p. 223, fig. 33; *Gard. Mag.*, Sept. 1, p. 519, with fig.

LÆLIO-CATTLEYA × CANHAMIANA ALBA.—*Gard. Mag.*, Aug. 25, pp. 502, 507, with fig.

LÆLIO-CATTLEYA × CAUWENBERGHEI, L. Lind.—*Lindenia*, t. 428. This is a variety of L.-c. × elegans.

MASDEVALLIA DAVISII, Rchb. f.—*Lindenia*, t. 427.

ODONTOGLOSSUM CIRRHOSUM, Lindl., VAR. SUPERBUM, Hort.—*Lindenia*, t. 424.

ODONTOGLOSSUM CRISPUM VAR. MACULATUM.—*Gard. Chron.*, Sept. 1, p. 248, fig. 35.

ODONTOGLOSSUM CRISPUM VAR. MIRABILE.—*Gard Chron.*, Sept. 1, pp. 248, 249, fig. 36. This is O. × Coradinei mirabile.

ODONTOGLOSSUM CRISPUM WRIGLEYANUM.—*Orchid Album*, t. 493.

SOBRALIA SESSILIS, Lindl.—*Bot. Mag.*, t. 7376.

TRICHOPILIA SUAVIS, Lindl.—*Lindenia*, t. 423.

The eighth part of volume iii. of *Xenia Orchidacea* has just appeared, and contains ten partly coloured plates of fifteen species. Three of the four species described by Dr. Kränzlin must take rank as synonyms, Lissochilus Graefei being identical with L. Krebsii, Rchb. f., Epidendrum Wendlandianum with E. venosum, Lindl., and Saccolabium Sanderianum with S. Mooreanum, Rolfe.

CALENDAR OF OPERATIONS FOR OCTOBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

TEMPERATURES.—On the figures quoted below allow a rise of 5° to 10° for sun heat in all departments.

THE COOL HOUSE.—Day 60°, night 55°, morning 50°. Fire heat during the night will now again be frequently needed, and also during the daytime should the weather be very cold. It is best to have a gentle warmth in the pipes, if only for a few hours, so that the ventilation may not be discontinued. Always bear in mind that when the outside conditions are such as to warrant the use of fire-heat, that it is not used in excess, for cool Orchids will not stand it.

Damping-down in this department may now be done twice a day—morning

and evening; but the watering of the plants must, as the winter and its accompanying short and dark days approaches, be done with greater care, for it is often then that cool Orchids are over-watered, the roots consequently dying. The watering-can must be used with discretion, the operator taking into account the naturally damp, slow-drying, and unexciting winter atmosphere, and be guided also by the nature of the compost and the bulk thereof, the mode of potting, etc. As a general guide I may say that the surface of the compost should look white for a day or two at this season before water is applied, and as the days shorten a still longer interval should be allowed.

THE INTERMEDIATE, CATTLEYA, and MEXICAN HOUSES.—Day 65° to 70°, night 65°, morning 60°. Damp down twice a day, and ventilate systematically, avoiding cool draughts.

THE EAST INDIAN HOUSE.—Day 75°, night 70°, morning 65°. Twice a day for damping-down will also be sufficient here. Always ventilate when circumstances are favourable, but be cautious about opening the top ventilators.

The time is now upon us when careful thought and consideration is likewise necessary when watering all species of Orchids. As a rule the inexperienced are greatly bothered about the winter treatment of their plants when at rest, the question of how often to water frequently cropping up. I have sometimes noticed plants so shrivelled by excessive drought as to be beyond recovery, and I have also seen them suffering from the effects of too much wet. It is scarcely possible to write down hard-and-fast rules on the subject, as conditions and circumstances vary so much; but a few words here may be serviceable.

Take the deciduous kinds, such as some of the Dendrobiums, the Catasetums and Mormodes, Barkerias, and others. Such kinds will, when properly matured, but not till then, require very little water during the winter months to keep them plump and healthy; probably once a fortnight, a little longer, or perhaps not quite so long.

Then come the thick, leathery-leaved, evergreen species, which are also capable of withstanding long droughts, such as the Cattleyas and Lælias, Brassavolas, and some of the Oncidiums and Epidendrums. Sometimes I find these go well for one or two weeks, and sometimes longer, without water, just in accordance with the weather. Many of the thin-leaved, evergreen species, too, require a good long rest; for instance, Cœlogynes and Lycastes, some of the Odontoglossums, as O. grande and O. citrosmum, and some of the Oncidiums, as O. trigrinum, O. varicosum, and others, having a decided period of inactivity. But there are many other species of the above genera which are almost always growing, and never having what may be termed a resting season, and these must not be allowed to get very dry, though they should be watered very moderately during the winter, simply letting them get dry and then giving water. I refer to species like

Lælia purpurata and L. crispa, Cattleya intermedia, Odontoglossum crispum, Oncidium macranthum, Miltonia vexillaria, Phaius, Zyogopetalums, Cymbidiums, etc.

Those withstanding the least drought of all during the winter are those having no pseudobulbs, such as Saccolabiums, Angræcums, Masdevallias, Sobralias, Bolleas, Phalænopsis, and Cypripediums. These should be kept moist, never allowing them to become dust-dry, nor, on the other hand, to be continually saturated. One word of advice: avoid extremes, and rather err on the side of too much water than too little, the former being the lesser of the two evils, for should shrivelling occur a serious injury is done.

Newly imported Orchids arriving in the late autumn months are not nearly so satisfactory as those coming during the spring and summer. From the time the plants are pulled from their native bowers until such times as they recommence forming either new roots or new pseudobulbs in their new homes, they slowly but surely go backwards, gradually getting weaker and weaker. In spring and summer they readily start to grow, and generally get nicely established before winter sets in; but at this time of the year they are slow to do so, and even then usually make thin spindly growth. Cattleyas and Lælias arriving now should be carefully treated. They should be nicely potted up without delay, and taken to their proper houses, but no attempt should be made to further rest them, as is done with strong-established plants. On the contrary, the immediate surroundings should be kept moist, and the compost should also be kept just moist, so that their store of vitality may not be uselessly expended before starting to grow. But should they commence to form new pseudobulbs, it is best to give them extra warmth and moisture, so as to encourage them.

In the Calendar for April I appended a list of Cattleyas and Lælias that are better for a little more warmth than that afforded in the ordinary Cattleya House. This extra warmth is of much more importance during the winter, and they should then be kept fully 5° warmer. I am desirous also to once more draw attention to the habit of some of these species, including Cattleya labiata, to rot when the flowers are cut, as this is a time when it generally occurs, and the damage may be done before it is observed, the prevention of which will be found in the Calendar for August.

Now that the repotting is finished, and the watering of the plants, damping-down, etc., does not demand so much time, extra attention must be given to the cleansing of the plants and houses, and this it becomes quite necessary to do. The next important thing to knowing that the plants should be clean, is to keep them so. A great deal of the Orchid grower's time is necessarily taken up with this work—the oftener the plants are looked over and cleaned the better it is for their well-being. But it is work which must be done carefully, and herein is a difficulty, for many young men who are entrusted with the work do not handle the plants in a careful or thoughtful

manner. A boon indeed is he who can be relied upon to clean a valuable Orchid with the necessary care and skill, for then a deal of worry and vexation is spared. Here are a few of the results which occur with heavy-handed and careless cleaners:—Cracked or broken leaves—a permanent disfigurement. Dormant eyes bruised or damaged, ending in ultimate decay. The centre leaf of a new growth pulled out, or it may be the new growth itself missing altogether. Or a plant which has recently been repotted with great care, so as to leave it in perfect growing order, often rendered loose and unstable in its pot. Such things are extremely annoying, and persons entrusted with such important work should remember that a new batch of Orchids cannot, like florist's flowers, be raised the following year, by sowing a packet of seeds, or by the insertion of cuttings.

But, notwithstanding these drawbacks, cleaning must be done, and as soon as the various infesting parasites are plainly visible. The plants, moreover, should be cleaned at intervals, even when no living creature may be seen upon them, for many of the larger kinds are thus prevented from breeding; and insect life in some form or another is often present, but only visible upon close examination, not to mention the dust and dirt which collects and chokes up the pores. An instance of this has recently come under my notice. On looking over a collection, some plants of Lælia anceps were noticed looking rather uncomfortable, the leaves showing a sickly yellow hue, and the cause was apparent on a peep through the magnifying glass. On the under surface of the leaves were quantities of red spider, apparently quite prosperous. Here are two good insecticides for cleaning purposes:—For scale and mealy bug, which collect round the hard pseudo-bulbs, and in the axils of the leaves of Cattleyas and Lælias in particular, Murray's Electric Insecticide is a good one. To one part of the compound add five parts of water, and with a small brush rub over the infested parts, not rinsing it off again. For the sponging of the leaves, and for general cleaning work, scrubbing the paint, glass, etc., "Killmright" is an excellent soapy mixture. Half a pint is sufficient for three to four gallons of water. Richardson's "XL All" insecticide metes out death to thrips, and seems, so far as I have tried it, to bear out all that is claimed for it. The vapouriser, too, is such a neat little invention, and with such plain printed instructions it is impossible to go wrong.

The roller blinds should be taken down when dry and stored away for the winter, as they speedily wear out if exposed to the winter weather, though if the trellis-work be taken away, so that the blinds rest upon the glass, they are exceedingly useful as a winter covering for protection against cold. Garden mats may be laid on the glass, and kept securely in their place if the blinds be rolled down over them. All permanent shading should now be entirely removed, and everything possible done to secure for the plants the maximum amount of light.

Writing on protection from cold reminds me of the double glazing system which was at one period thought by some to be the secret of success, though it has long since been abandoned, owing to the extra pane of glass excluding so much light, and thus the remedy was almost as bad as the disease. The system, however, has its virtues, and those who have hitherto been unsuccessful with Phalænopsis might do worse than try it.

Masdevallias are better for a temperature averaging 3° to 5° warmer than the coolest house from now until spring, and this should be given them if possible. They like a moist atmosphere, but should not be kept too wet at the root, as overwatering is the chief cause of that familiar black spot. The Chimæra section, and that pretty little species, M. tovarensis, certainly do best in the intermediate houses. There are many other so-called cool Orchids that are also better for this extra warmth during winter, such as Vanda Kimballiana, Anguloas, Aërides japonicum, Dendrobium infundibulum, and D. Jamesianum, Maxillaria grandiflora and M. venusta, Odontoglossum Londesboroughianum, Oncidium cheirophorum, O. tigrinum, and O. unguiculatum, Trichosma suavis and Sophronitis grandiflora. The latter, although growing well enough, is apt to get a little later year by year. Two species of recent introduction, Lælia crispilabia (Lawrenceana) and Lælia Crashleyana [What is this?—Ed.], seem to require similar treatment to the last named.

Cattleya dolosa and C. Walkeriana are best grown in baskets suspended in the Mexican house. In a former Calendar I recommended occasional syringing overhead in this department, but this must now be discontinued, or damping of the spikes may occur. A fresh supply of new tree leaves should now be placed under the stages in this, and also in the other departments.

Keep a sharp watch for any signs of the Shot-Borer (*see* February Calendar), which attacks the pseudobulbs of Dendrobiums. This is one of its most active months.

Do not let the plants become exhausted by allowing their flowers to remain on too long, as this is a prolific source of deterioration. Vanda cœrulea, for instance, suffers greatly. I am inclined to think that the departure of this beautiful Orchid is further hastened by keeping it too cold in winter. It should then either have the warmest part of the Cattleya or Mexican house, or be transferred to a suitable position in the East Indian house.

A correspondent cannot grow Oncidium Lanceanum. "There are black spots on the leaves," which is due no doubt to a superabundance of moisture. It is a warm-house Orchid, but is generally grown in that house regardless of position. It should be remembered that it belongs to the stout-leaved section, and on that account can endure more drought than most other inmates of this house. The lightest and dryest place should be selected for

the winter, taking care not to over-water it, but in summer grow it suspended with the hot Dendrobiums. This treatment, so far as my experience goes, best suits Oncidium Jonesianum, another difficult species.

Another would like to know "what the hygrometer should register." During the growing months saturation point should be aimed at, but of course it is almost impossible to maintain it during mid-day, with ventilation, though that does not matter. In fact it is always best to have a few degrees of dryness for an hour or two at mid-day. As the winter advances and the new growth becomes more and more matured the hygrometer should register about 5° for a greater length of time, as will be the case if instructions in damping-down are followed. For such as Dendrobiums when resting the saturation point should never be reached, the hygrometer then varying from 5° to 10°.

I am pleased to see notes compared on the subject of potting materials in the ORCHID REVIEW, as it is very interesting and instructive. I took the opportunity of advancing my own views early in the year, which will be found in the Calendar for February. New beginners should order the best Orchid peat and see that they get it, and no more than is required for the current season. The idea is to have it fresh.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Westminster, on August 28th, the show of Orchids was not very extensive, as is usual at this season of the year, though several fine things were staged, and two sterling novelties appeared for the first time.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), received an Award of Merit for the pretty hybrid Cypripedium × The Pard, supposed to be a hybrid from C. niveum and C. superbiens, though the point is not quite certain. The flower is white, the dorsal sepal with dotted purple lines and a green base, the petals densely spotted with purple, and the front part of the lip rosy purple. The rare and pretty Chondrorhyncha Chestertoni received a Botanical Certificate. It has yellow flowers with beautifully fringed petals and lip. Maxillaria fucata and M. Hubschii were also shown.

G. D. Owen, Esq., Selwood, Rotherham (gr. Mr. Watt), received Awards of Merit for two handsome Orchids, Cattleya × Hardyana, Selwood variety, a richly coloured form, and Lælio-cattleya × Oweniæ, a supposed natural hybrid with dark rose-coloured flowers and the tube of the lip white. Lælia

Perrinii has been suggested as one of the parents. A fine Cattleya Gaskelliana alba was also shown.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed the beautiful Lælio-cattleya × callistoglossa and L.-c. × Nysa, a plant of the pretty little orange-scarlet Lælia monophylla with six flowers, and Dendrobium aqueum (album), a Botanical Certificate being given to the latter fine old plant.

W. Thompson, Esq., Walton Grange, Stone, Staff. (gr. Mr. Stevens), sent cut spikes of Lælio-cattleya × elegans Cawenbergiana, a light rose form with broad, rosy crimson front lobe to the lip, and Cattleya Gaskelliana alba.

J. S. Moss, Esq., Winter's Hill, Bishop's Waltham (gr. Mr. Bazeley), showed a fine plant of Lælio-cattleya × elegans Mossiæ.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, exhibited a large and very beautiful hybrid Cypripedium, derived from C. Curtisii ♀ and C. Stonei platytænium ♂, which received a First-class Certificate. It was called C. × James H. Veitch. The ground colour of the flower is very light, the dorsal sepal striped with purple, the broad petals regularly spotted with the same colour, and the lip reddish purple.

Messrs. F. Sander and Co., St. Albans, received a Silver Flora Medal for a fine group. Cattleya × Kienastiana, which received a First-class Certificate, is a beautiful hybrid raised from C. Lueddemanniana ♀ and C. Dowiana aurea ♂. The flowers are large and handsome, the sepals white, flushed with rose, and the petals rosy lilac, somewhat mottled and veined with a paler tint. The lip is rich magenta-crimson edged with lilac in front, orange margined with white in the middle, while the tube is veined with white and the side lobes margined with rose. A similar award was given to the find old Habenaria Susannæ, an Indian species with large white flowers and beautifully fringed lip, which is seldom seen in gardens. The group also contained many of the charming Habenaria carnea and its variety nivosa, the brilliant H. militaris, Saccolabium cœleste, Cattleya Dowiana aurea, Phalænopsis Sanderiana, Angræcum Chailluanum, and Lælio-cattleya × elegans nobilis, a rosy crimson form to which an Award of Merit was given.

Messrs. Hugh Low and Co., Clapton Nursery, also received a Silver Flora Medal for a beautiful group, which included a large number of plants of Cypripedium Charlesworthii, one called var. magnificum being very large and brilliantly coloured. Saccolabium cœleste superbum received an Award of Merit. Lælia tenebrosa, Cattleya Gaskelliana alba, C. Eldorado Wallisii, Lælio-cattleya × elegans, Miltonia Rœzlii alba, and others, were also included in the group.

Messrs. Fred. Horsman and Co., Colchester, showed the fine Miltonia × Bluntii Lubbersiana.

Messrs. B. S. Williams and Son, Upper Holloway, exhibited the pretty little Lælio-cattleya × blesensis.

At the meeting held on September 11th, Orchids were rather more numerous than at the previous one, and three First-class Certificates were awarded, one to an exceptionally brilliant Cattleya shown by Mr. Statter, and another, singularly enough, to the old Renanthera coccinea.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), staged a choice group, to which a Silver Banksian Medal was awarded. The gem of the collection was the superb Cattleya Warscewiczii, Countess of Derby, which received a First-class Certificate. The sepals and petals were pure white, but the lip very brilliantly coloured. It is a magnificent form. The splendid C. × Hardyana Statteriana was also exhibited, C. Dowiana aurea, C. Leopoldi, C. Victoria-Regina, C. granulosa, C. × Minucia, which received an Award of Merit, Lælio-cattleya × elegans blenheimensis, Cypripedium × Numa, and C. × excellens, which was described at p. 275 of our last number.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), also received a Silver Banksian Medal for an interesting group, in which Cypripediums especially were well represented. The best of them was C. × Nandii, a beautiful hybrid derived from C. callosum ♀ and C. × Tautzianum ♂, to which an Award of Merit was given. It most resembled the last named, the flower being white flushed and spotted with rose, with a little bright green at the base of the dorsal sepal. Cypripedium × Charles Canham with eight flowers, C. × Indr (callosum × villosum), C. × Eyermani and Diana, C. × Io grande, C. enfieldense Hebe (Volonteanum × Lawrenceanum). Lælia pumila delicata, with lavender-purple sepals and petals and a pale lip, also received an Award of Merit, and Pleurothallis picta a Botanical Certificate. The group also included Cattleya Dowiana aurea, C. Aclandiæ, Saccolabium Blumei, Vanda tricolor, Masdevallia × Measuresiana, and Pleurothallis picta, which last received a Botanical Certificate.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), exhibited the pretty Odontoglossum × aspersum roseum, its flowers tinted with purplish rose, and cut flowers of the fragrant Cattleya Gaskelliana albens, each of which received an Award of Merit.

M. Jules Hye-Leysen, Coupure, Gand, received a First-class Certificate for a beautiful hybrid Cypripedium obtained from C. barbatum ♀ and C. bellatulum Marie ♂, under the name of C. × Charles Richman.

J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex (gr. Mr. Davies), showed a very large-flowered Cypripedium Charlesworthii, a fine specimen of Cattleya Loddigesii with over thirty flowers and buds, and flowers of Cattleya Dowiana aurea and C. Leopoldi.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), sent a richly coloured Cattleya Trianæ, and a form of Odontoglossum × Coradinei.

C. L. M. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), showed a good Lælio-cattleya × elegans Houtteana.

Sir Charles Pigott, Bart., Wexham Park, Slough (gr. Mr. Capp), showed a series of seven forms of Cattleya Gaskelliana.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), showed two forms of the pretty Cattleya Leopoldi and a fine inflorescence of Cattleya guttata phænicoptera.

E. J. Wickenden, Esq., Heathfield, New Southgate, showed the fine Oncidium Forbesii grandiflorum.

Messrs. F. Sander and Co., St. Albans, staged a group of rare Orchids, two of which received Botanical Certificates, namely Pleurothallis Laucheana and the rare Cœlogyne Meyeriana. The group also included the pretty yellow Lælia × Sanderæ, Cattleya × Kienastiana, C. Gaskelliana virginalis, the rare Miltonia Schrœderiana, M. spectabilis Moreliana, Sobralia xantholeuca, Calanthe × Laucheana, Catasetum fimbriatum, Odontoglossum bictoniense album, Angræcum articulatum, and Cypripedium × Maynardii.

Messrs. Hugh Low and Co., Clapton, staged a fine group, to which a Silver Banksian Medal was awarded. It contained a fine series of the beautiful Cypripedium Charlesworthii, Saccolabium cœleste, and others, also a plant of Spathoglottis pubescens, to which a Botanical Certificate was given.

Messrs. W. L. Lewis and Co., Southgate, also received a Silver Banksian Medal for a good group, including many Cattleyas, among which C. × Johnsonii (Harrisoniæ × Warscewiczii), and C. Gaskelliana, "J. H. Allen," were noteworthy. Habenaria carnea and var. nivosa, Odontoglossum grande, and various Cypripediums were also included.

Messrs. James Veitch and Sons, Chelsea, again sent their splendid Lælio-cattleya × Nysa.

Messrs. Fred Horsman and Co., Colchester, sent a very fine dark form of Lælia tenebrosa and a light Lælia purpurata.

Messrs. John Laing and Sons, Forest Hill, sent the showy Stanhopea tigrina, and the rare S. devoniensis.

CORRESPONDENCE, &c.

A. E. H., Liverpool.—If you look again you will see that two distinct hybrids have received the name of Cypripedium × Adonis, which of course ought not to have been the case.

C. W.—Catasetum macrocarpum, which is a rather variable plant.

J. H.—A form of Cattleya Gaskelliana.

E. G.—Some of the forms can hardly be distinguished already.

J. L.—The range of colour in Dendrobium Phalænopsis is very great, and light forms are very common.

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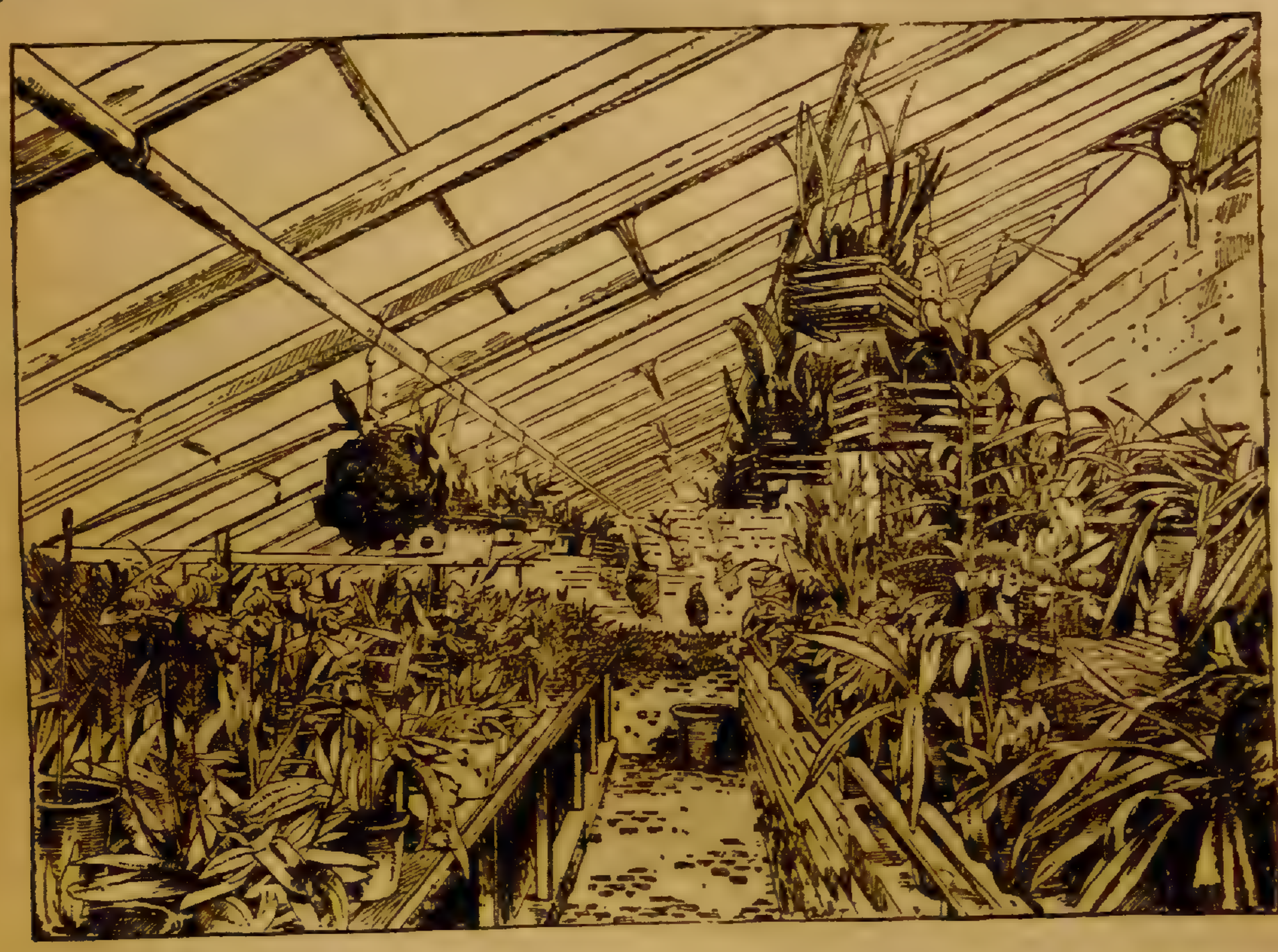

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DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	321
Vanda × Charlesworthii	322
The Orchid Collection of C. G. Roebling, Esq., Trenton, New Jersey ...	323
Pogonia speciosa	325
Dies Orchidianæ	327
Cattleya × Victoria-Regina	328
Hybrid Odontoglossums	328
Odontoglossum × Lindleyano triumphans	328
Odontoglossum × Lindleyano tripudians	329
Odontoglossum × Murrellianum ...	329
Odontoglossum × Cookeanum ...	330
Notes on Orchids in the Jungle ...	331
The Hybridist	333
Sophro-cattleya × eximia	333
Sophro-lælia × læta...	333
Cattleya × Browniæ	334
Cypripedium × œnanthum punctatum	334
Lælia × amœna	334
Cypripedium × Moensii	335
Cattleya Harrisoniana	335
Cattleya × Hardyana, Countess of Derby	336
Cypripedium × conco-Lawre (Fig. 33)	337
Fertilisation of Orchids in the Tropics	338
Culture of Bolleas and Pescatoreas ...	340
How to Popularise Orchid-growing ...	341
The Pickering Lodge Orchid Sale ...	342
Orchid Portraits	343
Calendar of Operations for November	344
Orchids at the Royal Horticultural Society	349
Correspondence, &c.	352

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THE ORCHID REVIEW.

VOL. II.] *NOVEMBER*, 1894. [No. 23.

NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during November, on the 13th and 27th respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon. On these dates, and during the winter, the exhibits may be removed at 4 o'clock, p.m.

At the Trowbridge Horticultural Society's Show held on August 22nd, Mr. C. Richman, gardener to G. L. Palmer, Esq., obtained the first prize for a new or rare plant with Cypripedium Charlesworthii.

On the occasion of the recent visit of their Royal Highnesses the Duke and Duchess of York to Leeds, a beautiful bouquet was presented by the Yorkshire College to H. R. H. the Duchess of York, consisting of Cattleya labiata, Dendrobium Phalænopsis, Vanda cœrulea, and Odontoglossum crispum, relieved by sprays of lily of the valley and maidenhair—a masterpiece of floral art, furnished by Mr. Featherstone of the Kirkstall Nurseries.

Mr. F. W. Ashton, manager to Messrs. W. L. Lewis and Co., Chase Side, Southgate, has been admitted as a partner in the business, which will be carried on under the same name as before.

The brilliant scarlet-flowered Habenaria militaris, together with a smaller number of H. carnea and its variety nivosa, have made a brilliant display in the warm house at Burford during the present autumn, their beautifully marked foliage serving to enhance the effect. The method of culture followed with so much success was given in detail by Mr. White at p. 83 of our last volume.

A fine plant of Oncidium ornithorhynchum album now flowering in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, bears seventeen spikes, most of them between two and three feet long, and averaging one hundred flowers on a spike. The effect is very charming.

An exceptionally fine form of Cattleya Dowiana aurea comes from the collection of R. B. White, Esq., Arddarroch, N.B., the petals being two and a quarter inches broad and the lip three inches, dark in colour, evenly veined with yellow, and the margins very much undulated.

A few duplicate plants from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, were sold the other day at Messrs. Protheroe and Morris's rooms, when a small piece of Cypripedium Lawrenceanum Hyeanum fetched fifty guineas, and C. insigne Ernesti twenty guineas.

VANDA × CHARLESWORTHII.

A very distinct Vanda appeared in the collection of Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, in May last, whose origin I was unable to account for, though I suspected it to be a natural hybrid, on account of resemblances to V. cœrulea and V. Bensoni, with the former of which it appeared. It was therefore provisionally named as above. The plant was exhibited at the Manchester show, as recorded at p. 182. Another plant has now appeared, this time in the establishment of Messrs. Hugh Low and Co., of Clapton, also as a single specimen, in an importation of V. cœrulea, from Burmah, and on further examination of the question I think there can be no doubt of its being a natural hybrid between the two species named. It is known that they grow together, and the present plant is as intermediate in habit and in the size and shape of the flower, as hybrids generally are. The flowers are two and a half inches in diameter, the texture of the sepals and petals being almost as in V. cœrulea, but beautifully veined and suffused at the margin with light rosy purple instead of blue. The lip, on the contrary, has almost the texture of V. Bensoni, while the shape is about intermediate between the two, while at the apex are two rounded auricles of reddish purple, as in V. Bensoni, only smaller and rounder. The front lobe is shorter than in V. cœrulea, and constricted behind the auricles, which, by the way, are absent in the species just named. Between the side lobes are two yellow markings, also as in V. cœrulea. There is only one explanation of such an unmistakable combination of the characters of the two species, and that is that V. × Charlesworthii is a natural hybrid between the species just named. Another genus must therefore be added to the list of those in which natural hybrids are known.

R. A. Rolfe.

THE ORCHID COLLECTION OF C. G. ROEBLING, ESQ., TRENTON, NEW JERSEY.

THIS collection is one of the finest in the United States. It is situated at Trenton, New Jersey, about thirty miles from Philadelphia, and is under the fostering care of Mr. H. T. Clinkaberry, a skilled and successful cultivator.

The Orchid range consists of five houses of various dimensions, mostly new.

The first we entered during a visit this autumn comprised principally Odontoglossums and Masdevallias, embracing most of the leading varieties, in excellent condition. Excepting a fine plant of Miltonia vexillaria superba and a few of Odontoglossum crispum, there was very little yet in bloom, though many were finishing fine pseudobulbs and showing strong for flower, notwithstanding the severe hot season they had just passed through. A fine lot of Lælia harpophylla were finishing up very strong growths under the cool treatment, and the tiny L. monophylla seemed quite at home here.

The house is a model one, built specially for Odontoglossums. It is a brick structure, partly sunk in the ground, and is a lean-to with northern aspect, a high brick wall along the south side, aided by canvas shades raised above the glass, serving to protect the plants from excessive summer heat.

On entering the next department the first thing to call our attention was a well-flowered plant of Epidendrum Godseffianum, with branched panicles five feet long carrying in all nearly ninety fully expanded, sweet-scented flowers, with dusky green sepals and petals, and a blue-purple striated white lip. This house is used for Dendrobiums, Zygopetalums, and Cymbidiums. Of the latter we noticed fine specimens of C. eburneum, C. Lowianum, four feet through, C. L. Mandaianum, two specimens, C. Devonianum, nearly two feet through, and many others, in excellent condition. Zygopetalum Mackayi was in fine flower, a large healthy specimen of Cœlogyne Dayana grandis was maturing its long slender pseudobulbs, and quantities of Dendrobiums were finishing up good canes on every side. Among the fine specimens and rare varieties were noted the following:—D. Dalhousianum, D. Falconeri giganteum, D. Farmeri, D. Griffithianum Guibertii, D. Richardii, D. ochreatum (Cambridgeanum), D. × Roeblingianum (Ruckeri × nobile), D. × Schneiderianum (Findlayanum × aureum) with growths of over a foot long, D. suavissimum, D. Huttonii, D. × splendidissimum grandiflorum, D. nobile Cooksoni, D. veratrifolium, D. Wardianum album, with growths over two feet long, &c.

Adjoining this is another cooler house well stocked with finely grown Lycastes, Dendrobium Wardianum, ripening up canes between three and four feet long, and a superb collection of Lælia autumnalis and L. anceps varieties. Among the latter were quantities of varieties alba (true), Dawsoni, Hilliana, Percivaliana, Sanderiana in quantity, Schrœderiana, and

Williamsii, L. autumnalis alba, L. Gouldiana, and L. × Crawshayana were each represented by a fine specimen, in spike. A fine plant of Miltonia Schrœderiana was doing nicely suspended in a basket.

We were next ushered into a warmer department occupied principally by Vandas, a shelf forty feet long of Calanthes, with pseudobulbs often six inches or more long, and the warm growing Cypripedia, which embrace many hundred plants, species, and hybrids, with seedlings in various stages of development. C. Charlesworthii was in flower in variety, a fine specimen of C. × Morganiæ carried seven large spikes, besides which we noted the following fine forms as we passed through:—C. Chamberlainianum, in variety, C. Dayanum, C. Elliottianum, C. præstans, C. Stonei, a specimen over three feet through, C. × Alice, C. × Allenianum, C. × Arthurianum pulchellum, C. × conco-Lawre, C. × De Witt Smith, C. × Hurrellianum (Curtisii × Argus), a very handsome hybrid with large drooping heavily spotted petals, C. × imperiale, C. × Josephianum (Druryi × javanico-superbiens), C. × Leeanum superbum in an eighteen inch pan, C. × microchilum, C. × macropterum, C. × Marshallianum, C. × Mrs. Warren Hooke, C. × Niobe in variety, C. × Robinsonianum, and many others. Among Selenipediums we observed S. reticulatum, a fine form of S. × grande, and its variety macrochilum.

Cœlogyne pandurata two feet across, and Bollea cœlestis alba were each fine specimens doing nicely, though not in bloom. The Vandeæ were represented by many well-grown plants, though very few were in flower. Saccolabium cœleste carried two fine spikes of chaste blue and white flowers, a few Vanda tricolor were blooming to perfection, and suspended at the end of the house was a fine basket of V. Sanderiana with four healthy growths and as many fine spikes, containing in all forty buds and expanded blooms, producing a grand effect.

The Cattleyas occupy a house sixty feet long, these are Mr. Roebling's pets, and neither money nor pains have been spared to make this a leading collection. It excels in albino forms, and among them we noticed Cattleya Aclandiæ alba (a recent addition), C. chocœnsis alba, C. Eldorado virginalis, C. Gaskelliana alba, with four leads, C. intermedia alba, four leads, C. Lueddemanniana alba, C. Mendelii Bluntii, C. Mossiæ alba, four leads, C. M. Reineckiana, several plants, C. Skinneri alba, C. Trianæ alba and C. T. virginalis, a large plant with nine spathes, C. Schrœderæ alba, five leads, Lælia Perrinii alba, L. purpurata Mandaiana, and many others.

Many fine sorts were flowering. C. Alexandræ was well represented by many spikes, often two feet long and three- to five-flowered, the waxy cinnamon-coloured sepals and petals, and soft rose-lilac lip, giving them a pleasing combination. C. labiata was at its best, many dozen blooms being fully expanded, varying to some extent in each plant represented. C. Walkeriana was showing well, in many instances the plants were blooming

from the leaf-growths. A remarkable sight was a plant of C. × Hardyana with twelve fully expanded flowers, while C. × H. Roeblingiana, which surpassed it in point of beauty, was represented by a fine specimen. A group of C. Bowringiana presented a fine sight in its many varieties. The collection is rich in forms of C. Rex, C. × Hardyana, and C. Dowiana, and many are very striking; C. Dowiana Roeblingiana being among the best and most distinct, with tawny crimson sepals and petals and an intense maroon lip. C. Mossiæ Hardyana superba, said to surpass the variety Massangeana; C. M. shorthillense, a rich dark form; C. Warscewiczii Lageriana, in which the sepals and petals are dark rose, and the usual yellow spots of the lip absent; C. velutina, C. Dormaniana, and numerous others added to the richness of the display.

Suspended in small baskets were a fine lot of Lælia pumila and its varieties Dayana and Roeblingiana, this latter very fine and rich, the bright rose-coloured flowers expanding five inches between tips of petals. L. Perrinii was also flowering well.

The new Lælio-cattleya × Novelty var. Trentonense, a cross between Lælia pumila and L.-c. × elegans Turneri was very striking, also L.-c. × e. Greyana, with a bright orange throat, L.-c. × e. Turneri, L.-c. × Phœbe, a fine plant, and L.-c. × Arnoldiana. Epidendrum myrianthum album, two fine plants, a group of Cœlogyne ocellata, with many dozen spikes of their white and yellow flowers, and Miltonias in variety were noticed among the myriads of good things represented.

Part of a shelf in this house is also devoted to the cooler Cypripediums such as C. × Harrisianum, numerous choice varieties of C. insigne, C. villosum, C. Boxallii, &c., also Selenipedium × leucorrhodum, S. × Schrœderæ, and others of the S. × Sedeni group.

The house is equipped with top and bottom ventilators, the latter in the shape of loopholes four inches square, through the brickwork over the pipes. These holes may be opened or closed at will by a lever; a very useful appliance which modifies the heat leaving the pipes, ensures a good circulation, and thus prevents a stagnant atmosphere. Open cloth shading elevated above the glass is used to break the solar rays and prevent scorching.

ROBERT M. GREY.

Orange, N.J.

POGONIA SPECIOSA.

A very distinct and striking Orchid has appeared in the collection of F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford). It is the old Cleistes speciosa, Gardner, a representative of a small American group which has been reduced to a section of Pogonia by Reichenbach. It appeared in a large imported clump of Lælia purpurata, and has now

flowered, perhaps for the first time in Europe. It is erect, about four feet high, with something of the habit of an Epistephium, and bears alternate, ovate-oblong, glaucous leaves, and two or three large purple flowers at the apex, which remain fresh for about five days. They may be compared with those of a large Bletia in general appearance, the sepals and petals being two and three-quarter inches long. It is a native of Brazil, and was discovered by Gardner in moist, shady places near Natividade and Arrayas in the province of Goyaz, though it has also been met with in the Organ Mountains and elsewhere. About thirty species are known of this particular group, but the present is the only one in cultivation.

R. A. R.

DIES ORCHIDIANÆ.

On looking round our collections at this particular season one cannot help being struck with their brilliancy, as compared with a few years ago, a result which is largely due to the introduction of some two or three showy species in quantity. I naturally allude to those charming plants Cattleya labiata and Dendrobium Phalænopsis, and now Cypripedium Charlesworthii appears, to add variety to the effect, though this evidently flowers a little earlier than its two brilliant compeers, and perhaps in this respect may be classed with Cattleya Rex, another handsome acquisition which at present is far less common. And we have a number of beautiful hybrids which may be mentioned in this connection, which if not common individually are rapidly becoming so in the aggregate, and each season adds to the number. It is evident that in a few years we shall have a large accession of these autumn-blooming forms, which will add still further to the attractiveness of our collections at this dull season. "Triumphs of Mr. Dominy's misplaced ingenuity," my dear old friend *Scrapias* called them in his *Dies Orchidianæ* of thirty years ago. "Hybridise everything else, if you will, but spare—oh spare—the Orchids."

But still the hybridists pursued their relentless course, and our collections to-day are the richer in consequence. What the effect would be if all the hybrids were suddenly banished is something too awful to contemplate. And I, for one, anticipate a great development within the next few years, especially in such a genus as Cypripedium. Some of these have already such complex parentage, and the blood of the various species is becoming so mixed by intercrossing, that new variations are sure to appear, and this, together with the increased opportunity of eliminating undesirable qualities by selection, is sure to yield some important results. Cypripedium × œnanthum, × Pollettianum, and × Moensii furnish indications of what may be

anticipated during the next few years, if our hybridists pursue their experiments with the same energy and perseverance as in the past, as they have every appearance of doing.

Cypripedium insigne is now beginning to flower for the season, and I wonder whether there are any more surprises in store. I make the remark in allusion to the developments of the last few years, since the introduction of the so-called "montanum" type. I hear some rumours of a white variety, and while one is to some extent prepared for surprises, still I scarcely expect to see this particular variety just yet. However, it is not safe to prophecy, especially after the experiences of the past few years, when this good old autumn bloomer has suddenly developed an amount of variation which was altogether unlooked for, but none the less welcome on that account.

And this leads me to speak of the lecture on "How to Popularise Orchid Culture," given by Mr. E. H. Woodall the other day. If we had a few more Orchids which would succeed as well in an ordinary greenhouse as Cypripedium insigne, we should soon have a great accession to the ranks of Orchid growers. I known several whose sole claim to the title rests on the possession of a plant or two of this good old species, which flower as regularly as the season comes round. Would that we had a few more Orchids with such good constitutions. Here also I look to the hybridist for help, as it seems not improbable that the list of greenhouse Cypripediums might be increased if experiments were made in the right direction. The beautiful hybrid Disas which have been so much in evidence of late are also pre-eminently greenhouse Orchids, and a few additions to the list would, I think, materially hasten the realisation of Mr. Woodall's praiseworthy desire to see their culture extended to those modest establishments where the accommodation does not extend beyond an ordinary greenhouse and a cold frame.

ARGUS.

CATTLEYA × VICTORIA-REGINA.

WE may soon hope to see an increase in the stock of this beautiful Cattleya. Messrs. Sander remark (*Reichenbachia*, ser. 2, ii. p. 89)—"Last year (1893) we crossed C. labiata with C. Leopoldi pernambucensis, and may soon prove the theory of C. Victoria-Regina being a natural hybrid or not. We cannot agree with the idea at present, as according to our views there is nothing either in flower, bulb, leaf, growth, or season of blooming to show us that our new Cattleya is a hybrid." We are glad to learn that its supposed

origin has thus been put to the test, though we fear that the above remarks are based upon evidence which has proved unreliable. The published figures are made up with the help of C. Leopoldi, and thus are incorrect so far as habit is concerned, while the original flowering in May, 1892, was certainly abnormal—delayed through importation—for two authentic plants already mentioned in these pages have both flowered in the autumn. Our remarks at page 293 afford conclusive evidence that the plant does possess precisely that combination of characters which it ought to have if our theory of its origin is correct.

HYBRID ODONTOGLOSSUMS.

(*Continued from page* 201.)

ODONTOGLOSSUM × LINDLEYANO-TRIUMPHANS.—The first trace of this hybrid which I have discovered is the account published by Reichenbach of a plant which flowered in the establishment of Mr. W. Bull, of Chelsea, in 1888, to which the name of O. × dicranophorum was given. It was described as a highly interesting Odontoglossum, conjecturally a hybrid, "and one cannot help thinking of Odontoglossum triumphans, notwithstanding the narrow floral envelopes, and in order to lessen ones perplexity one may think of O. Lindleyanum." The sepals are light yellow, with two large brown areas, and the petals similar, but with one brown area in the middle and some brown spots at the base. The lip is adnate to the column at the base, light yellow with a brown area in the middle. The crest is supposed to resemble "an old-fashioned two-pronged fork," whence the name. The column wings are square and toothletted, and the plant like a well-developed O. Pescatorei. I have not seen an authentic specimen, but think it must belong here.

The same year a plant appeared with Messrs. James Veitch and Sons, of Chelsea, which was supposed to be a form of O. triumphans with narrow segments. The characters of O. Lindleyanum, however, may be very clearly traced in it.

In 1891 a plant appeared with Messrs. F. Sander and Co., St. Albans, which I described as a natural hybrid between these two species, under the name of O. × Godseffianum. It is precisely intermediate between them in every respect, and a decidedly handsome form. It is darker in colour than O. × dicranophorum, to judge by the description of that, yet both appear to be forms of the same hybrid.

The following are the references to published descriptions of this hybrid :—

Odontoglossum × dicranophorum, Rchb. f. in *Gard. Chron.*, 1888, i. pp. 330, 360.
O. × Godseffianum, Rolfe, *l.c.*, 1891, ii. p. 728.

ODONTOGLOSSUM × LINDLEYANO-TRIPUDIANS.—This is another very interesting Odontoglossum, which made its appearance in 1887, in the establishment of the New Bulb Company, Colchester, and was sent to Reichenbach by Dr. Alexander Wallace, who believed it to be a hybrid between O. Lindleyanum and O. tripudians. It was described under the name of O. × Staurastrum. It was compared to O. Lindleyanum with broader segments, light yellowish green in colour, blotched with brown: and the stalked lip with a three-lobed blade, sepia-brown in front of the crest, and some mauve stripes and spots between the low keels; the column nearly that of O. Lindleyanum, also the leaves, while the pseudobulbs were round, like those of O. tripudians. I have not seen the individual in question, but believe its parentage is correctly described.

In May, 1889, a plant flowered with the Liverpool Horticultural Company, Garston, near Liverpool, which closely resembled a dark O. Lindleyanum in the shape and colour of the sepals and petals, though the colour of the lip, and details of the crest and column wings, all showed the same approach to O. tripudians, which clearly indicates its origin and parentage.

In June, 1890, another form appeared in the collection of M. A. Van Imschoot, of Mont St. Amand, Gand, which I described as a natural hybrid with this parentage, under the name of O. × Imschootianum, completely overlooking its earlier name of O. × Staurastrum. It is lighter in colour than the preceding, though clearly a form of the same hybrid.

In October, 1891, another form appeared in the establishment of Messrs. F. Sander and Co., St. Albans, in which the shape and colour of the lip, and the fimbriate column wings all have more of the character of O. tripudians, though the narrow sepals and petals and some other details all show the same unmistakable evidence of O. Lindleyanum, which was evidently the other parent.

The following are references to the published descriptions of this hybrid:—

Odontoglossum × Staurastrum, Rchb. f. in *Gard. Chron.*, 1887, i. p. 313.
O. × Imschootianum, Rolfe, *l.c.*, 1891, ii. p. 758.

There are two other Odontoglossums from the same region whose hybrid origin is almost beyond doubt, though, unfortunately, the same cannot be said respecting their parentage. These may now be considered.

ODONTOGLOSSUM × MURRELLIANUM.—This originally appeared in the collection of W. Burnley Hume, Esq., at Winterton, Norfolk, in 1875, in a lot of imported O. Pescatorei, and was named after that gentleman's gardener, Mr. Murrell. It was described by Reichenbach as a natural hybrid between O. nobile (Pescatorei) and O. nævium. The influence of the former is undoubted, but the latter grows far away, in the Santa Martha

Mountains, where it was collected by Schlim, though the fact has been lost sight of, owing to the confusion of this species with O. gloriosum. O. nævium is therefore quite out of the question, and the only alternative seems to be to suggest O. gloriosum as possibly the other parent, for that species grows in the same district, and would account for the peculiarities of the hybrid quite as well as O. nævium. The fact is it resembles O. nobile so much in its more essential features that it is not at all easy to fix the other parent with certainty. It differs in having much narrower, rather longer segments, and a less pandurate lip, with the front portion of the crest approaching the structure of O. gloriosum and its allies, while the tips of the column wings are also slightly prolonged, showing the same influence.

A few years later a second plant appeared in the collection of J. S. Bockett, Esq., of Stamford Hill, chiefly differing in having the front lobe of the lip more elongated and acute, and the sepals and petals slightly margined with a light purplish tint, whence it was called variety cinctum.

Should other plants appear hereafter they may show more of the character of the second parent, and thus clear up its origin.

The following are references to published descriptions and a figure of this hybrid :—

Odontoglossum × Murrellianum, Rchb. f. in *Gard. Chron.*, 1875, i. p. 653; *Veitch Man. Orch.*, i. p. 75; *Gartenflora*, xxxi. p. 353, t. 1101.

ODONTOGLOSSUM × COOKEANUM.—This is a single plant which appeared in the collection of Malcolm C. Cooke, Esq., of Kingston Hill, in November, 1891, and received an Award of Merit from the Royal Horticultural Society. It was received with O. blandum, which was probably one of the parents, as the shape of the flower, particularly of the lip, and spotting of the segments are in close agreement. On the other hand, the ground colour of the sepals and petals is bright yellow, which I think must have come from O. triumphans, to which the crest of the lip bears a decided approach, which would further account for the flower being enlarged to the size of O. Lindleyanum, or rather more, and the elongated column. The lip, however, is free at the base, and the wings of the column are much more like the other supposed parent. I cannot find any other combination which accounts so well for the characters of the plant, and the two supposed parents both occur near Ocana, though I have not found any record of their growing intermixed, which is not surprising, considering how little information of this kind is on record.

The following is the original reference :—

Odontoglossum × Cookeanum, Rolfe in *Gard. Chron.*, 1891, ii. p. 696.

R. A. R.

(To be continued.)

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 235.)

The limestone hills, half way on the road between Moulmein and Amherst, used to be the home of Calanthe rosea (Limatodes rosea, Lindl.). This small range of hills used to be covered with thousands of these plants, and it was a beautiful sight to see them in flower there some twenty years ago. On my last trip down the Amherst road I found the road lined with houses and fruit gardens, and the limestone hills were being broken up and carted away for the purpose of making lime, so that not a trace of the former beauties of these hills remained, and the rocks, which used to be covered with Orchids, and many rare and choice begonias, balsams, and aroids, were quite denuded of plants, and the whole character of the place was completely altered.

It was here that I used to find the charming Dendrobium cuspidatum, which, with the exception of a few plants that I brought home myself, I have never seen in England, and these have since died. This Dendrobium is one of the few that flower on the new growth. It blooms in the middle of the rainy season, and all the new green leafy growths are covered with numerous white flowers tinged with light green, and seen in a mass it is a very pretty Orchid. In Moulmein it is often cultivated on the oval husk of a cocoanut, and hung up in the verandah, when it presents quite a ball of flowers.

The old locality of Calanthe rosea not affording any plants, I proceeded up the river Salween twenty-five miles to Trenkla, to explore some of the limestone hills in that district, and was soon delighted to find my old friend growing luxuriantly, and the rocks covered with many other beautiful things, notably balsams and some very charming begonias, with leaves like velvet.

If the collectors in Moulmein would only go out themselves what treasures would they find; but they confine themselves, as a rule, to sitting in Moulmein, and sending the natives out to collect already well-known plants.

In this district also grows Habenaria Susannæ. It seems an extraordinary thing that this fine old Habenaria should only recently [August 28, 1894] have been brought before the Orchid Committee of the Royal Horticultural Society for a Certificate. I have seen whole beds of it in flower in Moulmein, and I can only suppose that difficulty of transport prevented the collectors from bringing it home before. It is best known in England from Wight's description of it in his *Icones plantarum Indiæ orientalis*, but no doubt it has before this been flowered in some of our botanical gardens. [This supposition is correct.—Ed.] Blume also mentions the plant as being found in the Indian Archipelago, and Mr. Sander

informs me that his collectors have recently found the plant in islands still more to the westward, so that the plant must be much more widely distributed than has hitherto been supposed. I have met with it both in India and Burmah, and it was always a great delight to come across a group of it. It is found in very warm, sheltered, moist places. It is too soft and succulent a plant to grow under any other conditions, and should do well in a shady corner in the stove. The flowers are not always pure white, I have found spikes of it with a dash of green, but all the varieties are beautiful.

Beyond Trenkla, on the opposite side of the river, Dendrobium luteolum abounds; I generally found it growing on the bushes within easy reach. In its native habitat the plant is of rather a straggling nature, in consequence of its throwing out numerous side shoots. It grows on the top of the bushes, freely exposed to light and air, and spreading itself out by its ærial roots until it forms quite a mass. In this locality, even during the short dry season, the fogs along the delta of the river are dense, so that, however much the sun may affect the plant during the day, it plumps up again at night. I never found this plant far from the river, and it is clearly a plant that likes both heat and moisture. This gives us a hint as to the best mode of cultivating it in England. The country on either side of the river is a very hot district. There is a short dry season during the winter which ripens the summer growth, causing the stems to lose their foliage, at the same time that the night dews keep the roots alive and the plants plump.

It may here be remarked that I have never found epiphites in the low country in situations where the air was always dry day and night. Higher up a few hundred feet Orchids are found where the necessary condition of humidity is absent, but in such cases the night temperature is very low, not high, as in the low-lying plains.

Although limestone hills abound in the neighbourhood of Moulmein, the varieties of Orchids growing on them are not very numerous. Calanthe vestita in its many varieties is found in various places in abundance, and occasionally a seedling of exceptional beauty turns up among them. A few botanical curiosities are found on the stunted bushes, but few Orchids grow on the rocks themselves, which are more generally found covered with numerous bright balsams and begonias.

I must not pass the district of Trenkla over without mentioning, for the benefit of future collectors, a beautiful Renanthera which I found there; a remarkable plant with long hanging leafy stems many feet long, producing very long drooping spikes of yellow flowers barred with chocolate. It was a nice thing, but I failed to get the plant home alive. The flowers were sent to the late Professor Reichenbach, but he did not determine it.

It is a mistake to suppose that Moulmein is worked out. Parish is the best man we ever had there, but even he collected very few of the ground

Orchids, many of which are very beautiful. No doubt the reason why these have been neglected is that they flower at the beginning of the rains, and are therefore difficult to collect, as it is not then very easy to get about; but I hope that some day we may get another enthusiast resident in Moulmein like Parish, who will work up the many beautiful plants still left. I only visited Moulmein occasionally when I could get short leave. To do the Orchids of this place really well would involve at least a full twelve-months residence there.

When speaking of Amherst, I should have mentioned that when I first went there I found Dendrobium Palpebræ growing on the trees overhanging the river in enormous masses. On my last visit not a trace of this plant remained, civilisation having quite denuded the district of wild plants. Growing as this plant did when I saw it, it must be a variety requiring much heat and moisture to succeed well.

(*To be continued.*)

THE HYBRIDIST.

SOPHRO-CATTLEYA × EXIMIA.

A FOURTH member of the interesting little group Sophro-cattleya has appeared, and, as before, Mr. Seden is the raiser. It was obtained by crossing Cattleya Bowringiana with the pollen of Sophronitis grandiflora, and received a First-class Certificate at thé Royal Horticultural Society's meeting at Chiswick on September 25th last. It closely resembles the pollen parent in habit, except that the pseudobulbs are ovoid in shape and rather stout. The leaves are solitary and under three inches long. The flower is very large, and fairly intermediate in shape, though the lip is much larger than in the pollen parent. The sepals and petals are bright purplish rose, and the lip much darker with a light yellow throat. The whole plant is but a few inches high, and is very beautiful, though it has evidently not yet reached its full development, as only a single flower was produced. The influence of the Cattleya parent, which has many flowers, may be more apparent as the hybrid becomes stronger.

SOPHRO-LÆLIA × LÆTA.

A new combination with the charming little Sophronitis grandiflora must now be recorded, as the result of Mr. Seden's energy, that species having been used in a cross with Lælia pumila Dayana, the last-named being the seed parent. The result is a very pretty little hybrid, which was exhibited by Messrs. Veitch at the meeting of the Royal Horticultural Society on October 9th, under the name of Sophro-cattleya × læta. We, however, prefer to register it under the name which indicates its exact parentage, as

in the case of other generic crosses. Although obviously undeveloped at present, the hybrid is a plant of much promise, as from the nature of its parents we anticipate that it will improve considerably as it becomes stronger. It is fairly intermediate in character, the sepals and petals somewhat resembling the Sophronitis parent in shape, but the colour a pleasing shade of light-red pink, while the lip rather inclines to the form of the Lælia parent, the colour being much deeper rosy purple with a light yellow throat. The colour is very attractive, and decidedly uncommon.

Cattleya × Browniæ.

This is a very pretty hybrid, derived from Cattleya Harrisoniana ♀ and C. Bowringiana ♂, for which Messrs. F. Sander and Co., St. Albans, received an Award of Merit at the Royal Horticultural Society's meeting on October 9th last. The sepals and petals are broad and of a very pleasing shade of rosy purple, and the lip entire, yellowish-white on the disc but suffused with rosy purple near the margin. All the parts are so broad as to make the flower quite round, and when the plant becomes stronger it will doubtless produce several flowers, like the two parents. The seed was sown in June, 1890, so that the plant is but little over four years old. It is dedicated to the wife of D. S. Brown, Esq., St. Louis, Missouri, U.S.A. By a slip it has been recorded as C. × Brownii, which is inadmissible, as there is a species to which this name has been applied (*see* p. 170).

Cypripedium × œnanthum var. punctatum.

A very distinct variety of Cypripedium × œnanthum has just flowered in the collection of H. Little, Esq., The Barons, East Twickenham. It was obtained by crossing C. × Harrisianum nigrum with the pollen of C. insigne punctato-violaceum. It differs from C. × œnanthum superbum in having the lower half of the dorsal sepal light green, distinctly spotted with purple-brown, the spots being arranged along the nerves, and thus somewhat in lines. The white margin is also broader, owing to the purple being lighter than usual and almost confined to the nerves, instead of being suffused. Thus it is a light coloured variety, in which the spots of C. insigne are more distinct than usual, owing to the smaller amount of purple. It is very distinct and pretty.

Lælia × amœna.

We are now able to record the appearance of another hybrid from Lælia anceps, the plant having been exhibited at the Drill Hall, Westminster, on October 9th, by C. Ingram, Esq., Elstead House, Godalming. The seed parent was L. pumila. The plant is at present quite small, the pseudobulbs most resembling those of the seed bearer, though some of them bear two

leaves. The flower is three inches in diameter with rosy purple spreading sepals and petals, and the lip much like L. pumila, but the side lobes white and striped with purple. Though most like L. pumila generally, there are many characters which show the influence of L. anceps. It is very interesting, and promises to be a good thing when the plant becomes stronger.

CYPRIPEDIUM × MOENSII.

A plant of this beautiful hybrid Cypripedium, with three flowers, was exhibited at the Royal Horticultural Society's meeting on October 9th, by T. Statter, Esq., Stand Hall, Whitefield, Manchester, and received an Award of Merit. It may be remembered that it is the plant raised by the late M. J. Moens, of Lede, and figured at t. 361 of the *Lindenia* under the name of C. × memoria Moensii—a name which at page 98 of our last volume we proposed should be simplified as above, for reasons which need not be repeated here. It is known to have been a seedling from C. Spicerianum, but the other parent was, unfortunately, not recorded. A careful examination of the plant, however, shows so many points of resemblance to C. × œnanthum superbum, both in the leaf and flower, as to leave little doubt whence the pollen was derived. It is one of the brightest coloured hybrids yet obtained, its bright purple dorsal sepal with dark median band, being particularly brilliant.

CATTLEYA HARRISONIANA.

An exceptionally fine variety of Cattleya Harrisoniana has just flowered in the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool, from whom we have received a flower, measuring four inches across its broadest diameter and the petals over an inch broad. It is flowering for the second time after importation and carries nine spikes with over forty flowers. The sepals and petals are deep rose-purple and the lip very ample, with the very characteristic shape and ridges on the yellow disc which characterises this species. It is much the finest form we have seen, and is cultivated under the name of Marlfield variety.

The history of this Cattleya has been very much confused. It was originally described in the *Botanical Register* for 1836 (xxii., sub. t. 1919), by Dr. Lindley, as Cattleya Harrisoniana, being dedicated to Mr. Harrison. It was said to be very near to C. Loddigesii, but to have the lip verrucose. Two years later it was figured in *Paxton's Magazine of Botany* (iv. p. 247, with plate), the name being changed to C. Harrisoniæ, with the remark.—"We know nothing of the history of this plant, any further than that it has

been several years in many orchideous collections, and originated in the first place, it may be presumed, in that of the late Mrs. Harrison." There can be little doubt, however, that it was one of the plants sent home by Mr. William Harrison, a merchant residing for some time at Rio de Janeiro, who sent large quantities of Orchids to his brother and sister, Mr. Richard and Mrs. Arnold Harrison, whose collections at Liverpool were famous about this period. The plant alluded to was evidently a fine specimen, for it is said to have made "this season no less than twelve good shoots, nine of these have flowered, mostly with five good blossoms, which remained more or less perfect for upwards of two months." Shortly afterwards it appeared in an enumeration of species by Mr. P. N. Don, as C. Harrisonii (*Florist's Journal*, 1840, p. 183); while in 1844 it was figured in the *Botanical Magazine* (t. 4085) as C. intermedia var. variegata, from a plant sent from Brazil by Gardner, which flowered at Kew in May of the previous year. In 1845 it was also figured under the name of C. Papeinsiana (*Ann. de Gand*, i. p. 57, t. 5) from a plant which flowered in the collection of Dr. Van Aken, of Gand, Belgium.

On the other hand, it has been variously confused with C. Loddigesii, which, however, has more reflexed sepals and petals, which are usually of a lighter colour, and a broader lip with smooth disc. In fact, the texture of the flower, as well as its general appearance and the disposition of the side lobes of the lip, are quite distinct, while the peculiarities are constant in character.

It is a native of the Organ Mountain district, in Brazil, as Gardner found it on trees growing in marshes at the foot of these mountains, in 1841, while Burchell, as long previously as 1826, collected good dried specimens at the head of the river Pacaqué, in the same region. Thus it appears to be a comparatively local species.

CATTLEYA × HARDYANA, COUNTESS OF DERBY.

We have now received a flower of the magnificent Cattleya × Hardyana, Countess of Derby, described at p. 294. The front of the lip, including the two yellow blotches at the side are almost exactly as in C. Warscewiczii, but behind this, on the side lobes, is the unmistakable veining of C. Dowiana aurea. The petals also are short and broad, as in the latter, and these facts fully establish its hybrid origin. Although creamy-white when first opening, it soon becomes pure white, and this is one of its most remarkable characters, as well as of C. × Hardyana Statteriana, whose lip is so different from that of the present one. Albinos of the parent species are excessively rare, which only increases the difficulty of accounting for their appearance as hybrids, unless, indeed, it results from some peculiar blending of the two colours, which seems not improbable.

CYPRIPEDIUM × CONCO-LAWRE.

THIS distinct and very pretty hybrid has been mentioned in our pages on several occasions, and now we are able to present our readers with its portrait, taken from a flower kindly sent by Sir Trevor Lawrence, Bart., in whose collection at Burford, Dorking, it was raised by Mr. W. H. White, who has long managed the Orchids there with so much success. It received an Award of Merit from the Royal Horticultural Society on February 14, 1893, on the occasion of its flowering for the first time.

FIG. 33. CYPRIPEDIUM × CONCO-LAWRE.

As will be observed, the flower most resembles the seed parent, though its whole shape is modified, and the dorsal sepal is veined with purple, in which the influence of C. Lawrenceanum is seen, as well as in the markings on other parts of the flower, and the shape of the staminode. It is dwarf in habit, and the leaves are longer and broader than in C. concolor, and beautifully marbled with dark green on a yellow-green ground. Thus the influence of C. Lawrenceanum is more apparent in the foliage. The photograph here reproduced was kindly taken by H. Little, Esq., The Barons, East Twickenham.

NOTES ON THE FERTILISATION OF ORCHIDS IN THE TROPICS.

At page 295 some interesting notes on this subject were given by Mr. Richard Pfau, of Costa Rica, though the results were somewhat negative, so far as insects are concerned. Others, however, have been more fortunate, as will be seen by the following notes on that remarkable genus Coryanthes, which supplement those recorded at page 264 of our last volume. In an article entitled "The Struggle for Life in the Forest," published in *Timehri*, Mr. James Raodwy, F.L.S., has recorded some very interesting observations made in British Guiana, from which we extract the following :—

"Hanging from a creeper or branch," he remarks, "may be seen here and there an oval bag-like mass of aerial roots, something like one of the nests of the troupials so common on the silk cotton-tree, above which are the pseudobulbs and leaves of that wonderful Orchid the Coryanthes. After throwing out two or three roots to attach itself to its support, it develops an interlacing network all round, in a way almost peculiar to the genus. At first sight it would be hard to say what purpose could be served by such a contrivance, but strike or shake the plant, and it will be seen that it is nothing less than a veritable ants' nest. The Orchid is, like other plants, subject to the attacks of many foes, such as cockroaches and larvæ, which are particularly fond of the aerial roots. To protect itself against these, the Coryanthes has chosen to provide a comfortable nest, wherein a garrison of carnivorous ants find shelter; they, in return for the accommodation, being ready to come out and fight at the first alarm of an enemy. . . .

"Having provided a guard against crawling vermin, the Coryanthes proceeds to develop a most wonderful flower, in which every part is obviously formed to attract a particular insect. . . . It has laid itself out to catch, without hurting it, a beautiful metallic-green bee (*Euglossa aurata*). From the base of one of its pseudobulbs, a long flower-stem is produced, which pushes itself straight downwards. Upon this it hangs a number of beautiful cups, into each of which a liquid drips from two horn-like processes in the upper part of the flower. Take a china teacup with a spreading mouth, hang some little flags over the handle, and stick a model of the figure-head of a Polynesian canoe opposite, and you have something like one of them, as it opens itself in the early morning from a bud resembling the swathing of a Chinese lady's foot. The species vary in colour and markings, being generally whitish or yellow, blotched and spotted with crimson. Their odour, as judged by our standard, is not pleasant, but nevertheless it is very attractive to the bees, which immediately swarm round in great numbers. Flying towards the flower, as a moth to a candle, the bee falls into the liquid which covers the bottom, and wetting its wings, is unable to use them. Look into the cup, and you will see a dozen bees

swimming round and round, or vainly trying to climb the slippery sides; and, if it be the second day after opening, one or two may be seen drowned. It was never the intention of the flower, however, that their lives should be sacrificed; but, on the contrary, that they should escape, and in doing so perform the office for which the whole contrivance has been arranged. Under the flags, where the column comes near but does not actually touch the cup, is a narrow opening, through which the bee can push its way out. In doing this it has to use sufficient force to widen the gap (which opens out like a spring door), when it comes in contact with the pollen-case, ruptures it, and carries off the male organ on its back. Not being able to fly, there is nothing to be done but to crawl over the flower-spike, where, heedless of its former trouble, it soon finds itself inside another flower. In making its way out, the pollen masses are rubbed on the stigma, and the ovary fertilised, after which it may carry out the pollen masses of this flower in turn to fertilise another."—*Timehri*, 1891, pp. 27–29.

About two years later the author was able to supplement his former observations by a further note:—

"We have lately had," he observes, "another good opportunity of observing the wonderful contrivances by which the flowers of this Orchid are fertilised. At seven o'clock in the morning the buds were a trifle loose, and they must have opened about an hour later. At 8.30 the bees were seen round the fully-opened flowers, and an hour later every pollen mass had been carried away. At the latter period from six to eight bees were continually hovering round, crawling under the dome-like appendage above the cup and dropping into the trap below. Their green and gold bodies flashed in the light as they buzzed round; on one of them a pair of pollen masses between the shoulders showed conspicuously against the metallic green back. One that we watched go into the cup turned itself round and round for a few seconds, and then, apparently seeing the light shining through the gap where the column approaches the lip, commenced to drag itself through the spring-like opening. The bottom of the cup was evidently slippery, and the insect fell back several times. However, at last it put both forelegs through and grasped the under lip, as we may call it, where there are two gaps on either side of a single tooth. By holding thus it was enabled to push its head through, but the body still remained inside. About a minute passed before it could get through entirely, and during that time it was straining every muscle, turning a little to this side and then to that, taking a fresh hold with one of its forelegs, and looking thoroughly exhausted when it got through. Altogether it took about two minutes to come out, and in its exertions had rubbed and broken the pollen masses on its back so that the ragged pieces remained on the stigmatic surface. The problem which puzzles us most is how these bees, which we never see at other times, discovered the flowers were open. There was a perfume, but

this was not very strong. No bees came in the afternoon or next day."—*L.c.*, 1893, pp. 169, 170.

These remarks recall the observations of Crueger, made many years previously in Trinidad. Speaking of a bee which visited the flowers of Coryanthes macrantha, Stanhopea grandiflora, and Gloxinia maculata, all three having the same perfume, he remarks :—

". . . Some cellular tissue which these humble-bees gnaw off exists also in the hypochil of the lip of Coryanthes macrantha. They are seen in great numbers disputing with each other for a place on the edge of the hypochil. Partly by this contest, partly, perhaps, intoxicated by the matter they are indulging in, they tumble down into the 'bucket,' half-full of a fluid secreted by organs situated at the base of the column. They then crawl along in the water towards the anterior side of the bucket, where there is a passage for them between the opening of this and the column. If one is early on the look-out, as these Hymenoptera are early risers, one can see in every flower how fecundation is performed. The humble-bee, in forcing its way out of its involuntary bath, has to exert itself considerably, as the mouth of the epichil and the face of the column fit together exactly, and are very stiff and elastic. The first bee, then, which is immersed will have the gland of the pollen mass glued to its back. The insect then generally gets through the passage, and comes out with this peculiar appendage, to return nearly immediately to its feast, when it is generally precipitated a second time into the bucket, passing out through the same opening, and so inserting the pollen masses into the stigma while it forces its way out, and thereby impregnating either the same or some other flower. I have often seen this; and sometimes there are so many of these humble-bees assembled that there is a continual procession of them through the passage specified."—Crueger in *Journ. Linn. Soc.*, viii. p. 130.

The genus Coryanthes is widely diffused in tropical America, and as the flowers are incapable of self-fertilisation we can easily see how important are the visits of the bees which we have just considered. In fact, the whole structure of these remarkable flowers is evidently arranged so as to secure the visits of the insects, and the consequent fertilisation of the flowers in the particular way pointed out, and the fact should increase our interest in these singular plants, which are too seldom seen in our collections.

CULTURE OF BOLLEAS AND PESCATOREAS.

A note on the culture of these interesting plants, to which we called attention at pages 14 and 277, appears in a recent number of the *Reichenbachia*, from which we condense the following remarks :—

There is no doubt that when the culture of Pescatoreas, Bolleas, and their allies is better understood they will be esteemed among the greatest favourites, and that that day is not far distant may safely be prophesied by the success which attends the efforts of most growers who carefully follow the conditions under which they occur in a wild state. They are found in perfect shade, on the trunks of trees, near the base, generally not far from the ground, which is covered with decayed leaves, and where mosses and other moisture-loving plants grow. The temperature is very equable throughout the year, and the daily variation in these sheltered spots is much less than in more exposed places. They should be grown in a moist shady house, of a fairly even temperature, ranging from about 60° to 70° the whole year round, and in hot weather a light dewing with the syringe morning and evening is beneficial. They may be grown in pots or baskets in a compost of quite half living sphagnum and the rest fibrous peat. Both bright sunlight and cold currents of air are injurious, and generally speaking they will succeed where Phalænopsis do well. In the Royal Gardens at Herrenhausen, Hanover, they are hung up over the path of the Palm Stove, and have succeeded admirably for some fifteen years under the care of Herr Wendland.

HOW TO POPULARISE ORCHID-GROWING.

THE afternoon lecture at the Royal Horticultural Society's meeting on October 9th was given by Mr. E. H. Woodall, of Scarborough, the subject being "How to Popularise Orchid-growing," the chair being taken by Mr. Douglas. The lecturer introduced his subject by remarking that one of the first things required to ensure success was observation, a few days of which would enable a gardener to see whether a certain position or treatment given to a plant was suitable or otherwise. If Orchids were to be grown by the million, including those with only meagre house accommodation, a more thorough knowledge of the essential requirements of the plants was necessary. He had proved in his own garden that it was possible to grow a good number of Orchids with only one house and a frame, and to derive much pleasure from them. It was desirable that collectors should describe the habitats of the plants they send home, giving particulars as to climate, temperature, elevation, humidity, &c., which would enable cultivators to provide similar treatment to that which the different species enjoy naturally, and prevent much of the waste that at present occurs by tearing these jewels from their native homes and bringing them here, where at present so many die.

Cool Orchids have been so successfully grown by large growers, and long houses are so frequently devoted to them, that the impression prevailed that

without such houses success could not be attained. Many of them, however, could be grown well by amateurs who had only one ordinary greenhouse and a cold frame. The lecturer commenced growing Orchids in a rather close and stuffy fernery facing north, but soon found that such conditions were adverse to their well-being. He then excavated to a depth of about eighteen inches under a north wall, and concreted the bottom, which he covered with water. Over this he placed a frame, standing the plants on inverted pots over the water. Many of the cool equatorial Orchids came from close damp woods where there was but little winter or summer, as we know these seasons, and to imitate these conditions as far as possible the lights were taken off entirely during wet or dewy days and nights, but during dry days they were closed. The plants were put into this frame in the late days of spring, and removed again at the end of September, when it was found that they had recovered themselves greatly and made abundance of roots. They were then placed in an eastern aspect in the greenhouse, and each stood over a saucer of water, where they fared well until March, when canvas screens were required to protect them from the sun, then beginning to obtain power. Afterwards, when again put into the frame, the plants grew away at once, and in September were remarkable specimens, most of them having healthy flower-spikes in their strong new growths. The system proved remarkably successful, with the exception of the hot, dry season of 1893, when the absence of rain during the hottest period of the year made it extremely difficult to keep the plants cool and moist. The idea was to keep them as cool and moist as possible during our summer, when they were better able to stand the winter, neither extremes occurring in their native homes, where they were always cool and moist. Some of the species he found amenable to this treatment were Odontoglossums crispum, Pescatorei triumphans, Rossii, also O. × hebraicum and others, while those which enjoyed the summer treatment, but required a slightly warmer place than the cold greenhouse during winter were Odontoglossum grande and Epidendrum vitellinum. Certain modifications in the treatment had been found necessary for other species, though for the most part such special treatment was only required during part of the season. For these details our readers are referred to the Society's *Journal*, where the paper will doubtless appear in full. We welcome any means of popularising the cultivation of these charming plants.

THE PICKERING LODGE ORCHID SALE.

The remaining portion of the celebrated Pickering Lodge collection was sold by auction on October 16, 17, and 18, by Messrs. Protheroe and Morris, when a large company was present, and the prices realised were again quite

exceptional, the different lots averaging between £3 and £4 each. The first two days' sale realised over £2,500, among the principal buyers being Mr. F. Hardy, Mr. T. Statter, Mr. E. Ashworth, Mr. G. Ball, Messrs. Veitch, and other nurserymen. The best price realised was for Cypripedium insigne Sanderæ (figured at page 41). It was a small healthy plant in a four-inch pot, which was purchased from Messrs. Sander by the late Mr. Hardy, a fortnight before his death, for the sum of 100 guineas. The bidding commenced at this particular figure and ultimately reached 260 guineas, at which price it was knocked down to Mr. F. Hardy. A fine plant of Lælio-cattleya × bella fetched 150 guineas, and a smaller one 75 guineas, while L.-c. × callistoglossa went for 50 guineas. Cattleya Schrœderæ alba was knocked down at 160 guineas, C. Mossiæ Reineckiana (said to be the original plant) at 75 guineas, a plant of C. × Hardyana in indifferent health at 70 guineas, while its variety Massaiana realised 100 guineas. A white Sobralia fetched 50 guineas, Lælia × Tresederiana superba 22 guineas, while other choice things also fetched good prices. These facts indicate the character of the collection, which contained few indifferent things; and also the growing demand for choice varieties among the rapidly increasing band of Orchid amateurs.

ORCHID PORTRAITS.

AËRIDES SAVAGEANUM, Sander.—*Reichenbachia*, t. 81.

ANGRÆCUM SESQUIPEDALE.—*Gard. World*, Sept. 29, p. 73, with fig.

ANGULOA × MADOUXIANA, L. Lind.—*Lindenia*, t. 434.

ARACHNANTHE MOSCHIFERA, Blume.—*Gard. Chron.*, Oct. 13, p. 435, fig. 55.

BROUGHTONIA SANGUINEA, R. Br.—*Orchid Album*, t. 499.

CATTLEYA LABIATA FOLEYANA.—*Orchid Album*, t. 497.

CATTLEYA MOSSIÆ VAR. WAMBEKEANA.—*Lindenia*, t. 433.

CATTLEYA × VICTORIA-REGINA, O'Brien.—*Reichenbachia*, t. 85.

CYCNOCHES LODDIGESII, Lindl.—*Lindenia*, t. 436.

CYPRIPEDIUM × ADONIS.—*Orchid Album*, t. 500.

CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.—*Lindenia*, t. 431.

CYPRIPEDIUM × LAWREBEL.—*Orchid Album*, t. 498.

DENDROBIUM JOHNSONIÆ, F. Muell—*Gard. Chron.*, Sept. 22, p. 339, fig. 46.

EPIDENDRUM (DIACRIUM) BICORNUTUM.—*Gard. Chron.*, Sept. 22, pp. 336, 337, fig. 45.

LÆLIA AUTUMNALIS ALBA.—*Reichenbachia*, t. 87.

LÆLIA PURPURATA VAR. COMTE DE MONTEBELLO.—*Lindenia*, t. 435.

MILTONIA SPECTABILIS MORELIANA.—*Reichenbachia*, t. 83.

MILTONIA SPECTABILIS MORELIANA ATROPURPUREA.—*Gard. Mag.*, Oct. 13, p. 617, with fig.

ODONTOGLOSSUM CORDATUM AUREUM.—*Lindenia*, t. 430.

ODONTOGLOSSUM CRISPUM VAR. CAPARTIANUM.—*Le Jardin*, Aug. 5, p. 175, fig. 83.

ODONTOGLOSSUM CRISPUM VAR. OCELLATUM.—*Lindenia*, t. 429.

ONCIDIUM KRAMERIANUM, Rchb. f.—*Reichenbachia*, t. 84.

ODONTOGLOSSUM PESCATOREI VAR. CHABERIÆ.—*Lindenia*, t. 432.

SCUTICARIA KEYSSNERIANA.—*Journ. of Hort.*, Aug. 30, pp. 194, 195, fig. 28. This is the old S. Steelii.

SOPHRO-CATTLEYA × EXIMIA.—*Journ. of Hort.*, Oct. 4, p. 321, fig. 48.

SOPHRO-CATTLEYA × LÆTA.—*Gard. Chron.*, Oct. 20, pp. 476, 477, fig. 63 (the figure misnamed S. × Batemaniana).

SPATHOGLOTTIS KIMBALLIANA, Sander.—*Reichenbachia*, t. 88.

TRICHOCENTRUM TIGRINUM, Lind. and Rchb. f.—*Bot. Mag.*, t. 7380.

ZYGOPETALUM (PESCATOREA) KLABOCHORUM, Rchb. f.—*Reichenbachia*, t. 86.

CALENDAR OF OPERATIONS FOR NOVEMBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

TEMPERATURES.—These should now vary from two to five degrees below those given for last month.

The mention of November is not calculated to inspire Orchid growers with hilarity, especially this season, when comparatively dark and sunless weather has been already too common; and now that we enter November our hopes that the autumn may compensate to some extent for the summer must die. Of course I refer to local conditions, which possibly may have been better elsewhere; if not, the year 1894, now rapidly approaching its end, must, I think, be generally considered to have been unsatisfactory so far as Orchid culture is concerned.

Bad, however, as it has been, there is one redeeming feature. It has had no ill effects on cool-house Orchids, which, I am pleased to observe, seem to have been quite contented with existing conditions, and have put on strong healthy growth, and we may hope to get a gay show of flowers in due time. Odontoglossums in this house are sometimes attacked during the winter months by spots of mildew, which appear on the under surface of the leaves. They are small at first, but soon spread, and become circular patches of mould, which if allowed to remain for only a short time before being cleaned away, leave behind them irremovable spots of a yellowish hue. The appearance of this pest indicates that something is wrong with the atmospherical conditions of the house, and although sponging removes it for the

time, it soon reappears if the conditions remain unchanged. This spot is undoubtedly caused by a too stagnant atmosphere, as it never occurs when a structure is sufficiently ventilated. Beware, then, at this season, for during the autumn, and sometimes even in winter, periods of exceedingly damp, and, at the same time, very mild weather occur, and at such times the doors and ventilators, both top and bottom, should be opened wide, and if the side lights directly opposite the plants are constructed so as to admit of it, they should be partly opened too.

This is the time for foggy weather. The pure fogs of the country are in no way injurious, but those in the neighbourhood of large towns are so charged with smoke and various chemical fumes, which are unable to pass away, that vegetation is seriously handicapped. Under these circumstances it is not at all surprising that when this modern giant swoops down upon our plants, the flowers and flower-spikes are stricken, and even the foliage of some species is likewise affected, more especially if very dry at the root, or the atmosphere of the house very much parched. My experience is that plants which are moist at the time of a heavy fog do not suffer so much as those that are very dry, and therefore I would recommend that drought should be guarded against at such times, that the ventilators be closed, and sufficient warmth maintained to cause a genial temperature. Time permitting, it is an excellent plan to sponge the leaves of Orchids with clear soft water when the fog has passed away.

Damping-down in all departments will now require to be done once or twice a day, in accordance with the outside conditions. Should the weather be damp and mild, once will suffice, and that during the morning; but should the weather be such as to necessitate a good amount of fire heat, twice a day will probably not be too much; though here again we must be guided by circumstances.

I have previously recommended the ordinary open greenhouse stage for Orchid houses, so that the air can freely circulate up between the plants, in preference to closed stages with moisture-retaining material, such as shingle, or shell-gravel placed on them, though in the former case damping between the pots is more frequently needed than in the latter. Then again the floor of one house may be composed of some hard material, such as concrete, in another it may be ashes, or something in the nature of ordinary soil. The latter kind of floor in my opinion is better generally than the former, as the moisture arising therefrom is more regular and better for the plants.

Cattleyas and Dendrobiums have perhaps been the most affected by the small amount of sunshine this year. Cattleyas are late, some in the formation of their pseudobulbs and others in flowering, and all require more artificial warmth than is usual at this season. This will assist them to some extent in maturing: artificial heat can never quite make up for deficiency of sun heat.

Dendrobiums undoubtedly flower much more freely when the new growth is completed early, so that there is still time, before the sun has lost its power, to thoroughly mature and ripen it, so that next year they will probably not be quite up to their usual standard of excellence, which is very unfortunate, though unavoidable. I am not an advocate under any circumstances of squeezing out of Dendrobiums the greatest possible number of flowers by severe resting. It is not altogether a system to be lightly recommended, for it frequently happens that when plants are so severely rested, coupled with the great strain upon the plants in supporting so many flowers, reduces them to such a state of utter exhaustion as to necessitate several years of skilful culture to bring them back again to health and vigour. For instance, it is quite possible by giving Dendrobiums of the nobile class a very long and excessively dry rest, to make them produce flowers from the last made pseudobulbs;—very pretty, of course, but not quite natural or reasonable, and as a consequence the piper has to be paid, sometimes, perhaps, very dearly. When the season of growth arrives the mischief is apparent, and one such short growing season as we have just passed through does not by any means remedy the evil. I would therefore advise growers not to go to extremes in this respect, but rather to be content with a moderately well-bloomed plant, for such moderation is sure to prove more satisfactory in the long run. I do not, however, depreciate the great value of sufficient rest and repose, which must be given in order to ensure success, as in previous Calendars I have mentioned it more fully in respect to the requirements of the various species.

When a new species of Orchid is introduced there is in most cases some difficulty in getting a clue as to its proper culture, and as a guide the growers anxiously inquire for news concerning its natural habitat. The persons most likely to be able to give that information are the importers, or, better still, the collector, which latter should be in the best position to give such details as could at once be turned to practical and profitable account. Should the collector chance to be a really practical Orchid grower at home, well knowing the behaviour of some species under glass, he would be more likely to furnish such details as would render artificial culture less troublesome, than one knowing nothing of cultural matters. We have already one collector who is likewise a good grower, sending to the ORCHID REVIEW from time to time valuable information, principally on the habitats of Dendrobiums, and if others could be induced to do likewise with respect to other species we might yet conquer others which have hitherto proved intractable. Observations taken on the spot where the plants grow could not fail to be most useful, but in most instances it is either not given at all or only in the most meagre and indefinite fashion. The native country, the name of the district, and the number of feet above sea level, is a great help; likewise any news respecting the dry and rainy seasons; the average tempera-

ture; whether growing in shade or in the sun, on trees or rocks, on the ground or by the sides of streamlets; the nature of the soil, &c. Such information is always instructive, and when forthcoming is of material aid to Orchid growers who stay at home, and I see no reason why it should not be given in detail. Those who are acquainted with hilly or mountainous districts, even in England, will not have failed to observe the difference in temperature of districts not far apart. At some points the breeze seems always fresh, at others a certain calmness prevails, although the wind may be heard to roar in the distance. These differences are caused by peculiarities in the aspect or surroundings of the locality, and are accompanied by certain differences in the temperature. Here a herb or shrub grows luxuriantly, while there it looks starved and stunted, and no doubt the same thing occurs in the case of Orchids—perhaps in a more marked degree. Some collectors affirm that frost actually occurs where some of our Vandas, Cattleyas, Lælias, and Odontoglossums grow; but from practical experience I have found it is not only best to keep away the frost, but still safer to keep them 10°, 20°, or 30° above freezing point according to the species.

Lælia majalis does not with me endure nearly such a low degree as L. autumnalis, though both should be wintered in the Mexican house, the former being suspended near the glass in the warmest part, and kept pretty dry. Other Lælias like anceps and Gouldiana must not be kept too dry until after they have flowered. Cattleya citrina is also best suspended at the warmest part, or it is apt to spot; it requires but little water during winter.

Cœlogyne cristata is best for a cool and long rest in a dry atmosphere, as no difficulty with the damping of the flower spikes will then occur Pleione lagenaria and P. maculata are now showing flower buds, which expand well in the cool house. Keep the compost slightly moist until the flowers begin to open, after which give none, or the flowers will rapidly go off. Calanthe vestita and C. × Veitchii should be kept just moist at the root, and given a light place in the warmest house until the flowers open. Thunias are now dying off, and water may be entirely withheld for intervals of a month.

Many beautiful Cypripediums will be in bloom this month, including the many varieties of C. insigne, C. Spicerianum, and their numerous hybrids; also Selenipedium longifolium, S. Schlimii, and the hybrids arising from them. Many of the above species and hybrids are often recommended for cool-house culture, but all, including C. insigne and S. Schlimii are really better for intermediate temperature. I have always been accustomed to place the last named in the cool house for the summer, but this year I have kept it in a shady corner in the Mexican house, with better results.

The value of a good batch of Dendrobium Phalænopsis, and its allies, will this month be appreciated; they must be kept in a warm temperature, or

the flowers are apt to go off quickly, and the buds to open slowly, thus causing a poor display. Much also depends on the pureness of the atmosphere, which should not be neglected, as they are lovely when the whole spike of bloom remains in perfection for a time.

Cattleya Bowringiana is useful during this dull month, though I often think the truss is not sufficiently large to compensate for the smallness of the individual flowers. Plants grown near the glass produce the largest trusses. Though valuable as an autumn bloomer, it has been somewhat eclipsed by the re-introduction of the beautiful C. labiata, to which we now look for the chief display of the month.

Disas should now be removed from the cold frames and housed, taking care to get them near the light in a temperature ranging from 40° to 50°. Satyriums also require the same treatment.

Lælia Crashleyana, mentioned in last month's Calendar, should read L. Lucasiana.

CONTINENTAL NOTES.

By Ch. de Bosschere.

At the recent meeting of the Chambre syndicale des horticultures belges, at Gand, M. Jules Hye exhibited a series of very beautiful Orchids—Cattleya labiata, C. Schilleriana, C. Leopoldi pernambucensis, Lælio-cattleya × exoniensis, Odontoglossum grande, and Cypripedium × Albertianum.

The Orchidéene, of Brussels, has recommenced its monthly meetings, after the recess, at the Horticulture Internationale. A beautiful series of Cattleya labiata and C. Dowiana was exhibited by Dr. Capart and by Messrs. Linden; the latter also contributing a fine C. Dowiana Statteriana, with a large amount of yellow on the sides of the lip; a fine dark Cypripedium Charlesworthii; three fine examples of Catasetum Bungerothii, one raceme bearing as many as thirteen flowers; Cattleya × Hardyana Lindeni, with very dark lip, marked with clear yellow at the sides; a fine C. maxima; and Lælio-cattleya × elegans Cauwenbergiana. M. Van Wambeke exhibited Cattleya maxima, and a very large dark form of C. Aclandiæ. M. Madoux a fine Cattleya gigas with marbled segments, a beautiful Odontoglossum crispum, and a very pretty hybrid Cypripedium.

In the houses of M. A. A. Peeters, of Brussels, between three and four hundred plants of Oncidium Forbesii are flowering in great beauty, and fifteen hundred of Cattleya labiata; also a superb form of Cattleya × Hardyana, and a very large and brilliantly coloured C. Schilleriana.

In the establishment of M. Charles Vuylsteke is flowering a very fine form of Cypripedium × Bosscherianum.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

A FEW choice Orchids were exhibited on the occasion of the Royal Horticultural Society's Conference on Trees and Hardy Shrubs, held at Chiswick on September 24th, when the various Committees met as usual, though the work of the Orchid Committee was not heavy.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, received a First-class Certificate for a very charming novelty in the person of Sophrocattleya × eximia, a hybrid derived from Cattleya Bowringiana ♀ and Sophronitis grandiflora ♂. Three beautiful forms of Lælio-cattleya × Nysa were also exhibited, each of which received an Award of Merit. These were L.-c. × Nysa superba, a very fine form; L.-c. × Nysa picta, a lighter form with the tips of the petals and side lobes of the lip blotched with purple; and L.-c. × Nysa purpurea, in which the yellow of the type was absent, and the whole flower suffused with warm purple, the lip being very broad and handsome. The firm also exhibited Cypripedium × Astrea (C. Spicerianum ♀ × philippinense ♂).

Messrs. F. Sander and Co., St. Albans, exhibited several good things, and among them a handsome Cypripedium raised from C. bellatulum ♀ and C. × superciliare ♂, to which a First-class Certificate was awarded under the name of C. × Arnoldiæ. The flowers are creamy white thickly spotted with purple. A Botanical Certificate was given to Dendrobium cruentum, a rather rare species, having greenish white flowers marked with bright red on the lip. The group also contained the natural hybrid Lælio-cattleya × albanensis and its variety rosea, a magnificent Cattleya dolosa, Lælia × Oweniana, Cycnoches chlorochilon, Cypripedium × Batalinii (C. purpuratum ♀ × C. Argus ♂), and Aërides Lawrenceæ.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent some handsome Cattleyas, the distinct C. bicolor cœrulea, in which the front lobe of the lip is of a decided lilac-blue, receiving a First-class Certificate. The others were a fine form of C. Dowiana aurea, two good forms of C. granulosa, and C. Leopoldi.

M. Wells, Esq., Broomfield House, Sale (gr. Mr. Hind), received an Award of Merit for the fine hybrid Lælio-cattleya × Wellsiæ (C. labiata ♀ × Lælia purpurata ♂), bearing a spike of four flowers. The sepals and petals were light pinkish blush, and the lip dark purple crimson passing into rosy crimson at the edges. It flowers later than L.-c. × Canhamiana and its allies, a character which may be traced to its Cattleya parentage, and adds to its value.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited a fine spike of Lælio-cattleya × elegans, with white tube to the lip, and very

broad deep purple front lobe. Also a hybrid Selenipedium allied to S. × calurum.

Mr. J. Prewett, Swiss Nursery, Hammersmith, exhibited a group of fine specimens of Dendrobium formosum, tastefully arranged with maidenhair ferns and other plants, and received a Vote of Thanks.

The next meeting was held at the Drill Hall, James Street, Westminster, on October 9th, when there was a fine display of Orchids, but owing to the dull and somewhat foggy weather, they were not seen to quite the best advantage.

G. D. Owen, Esq., Selwood, Rotherham (gr. Mr. M. Watts), exhibited two magnificent varieties of Cattleya labiata, each of which received a First-class Certificate, and a beautiful Lælia præstans alba. C. labiata, Countess Fitzwilliam is a beautiful white form with very pale yellow throat to the lip and a trace of lilac-blush on the disc. C. l. Foleyana has blush-white sepals and petals and an orange-coloured blotch in the throat with a smaller crimson-purple one in front of it.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent some splendid things, notably a four-flowered inflorescence of the magnificent Cattleya × Hardyana, Countess of Derby described on page 294. And it may here be noted that the sepals and petals are pure white, though when just opening they are creamy-white. The lip is remarkably like that of C. Warscewiczii, but there is golden veining on the side lobes, and the shorter petals, which show the influence of C. Dowiana aurea. A fine plant of Cypripedium × memoria-Moensii with three flowers received an Award of Merit. C. × gloriosa (C. insigne Chantini ♀ × C. × Io grande ♂) and Cattleya × Minucia were also sent.

Admiral Ralph P. Cator, Hazlewood, King's Langley, Herts (gr. Mr. G. E. Day), received an Award of Merit for Dendrobium Phalænopsis alba, which was white with the exception of some rose-purple veining on the front of the lip; and a Botanical Certificate for Stauropsis philippinensis (*see* p. 308). Dendrobium bigibbum was also sent.

Walter Cobb, Esq., Dulcote, Tunbridge Wells, received an Award of Merit for Miltonia spectabilis atrorubens, a large form, and probably the darkest yet known.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent a magnificent Cattleya × Hardyana marmorata, in which the colours of the two parents were beautifully blended, and the general effect very charming. He also exhibited Cattleya bicolor Wrigleyana, Miltonia spectabilis Moreliana, Trichopilia fragrans, and Sarcanthus pugioniformis, the latter receiving a Botanical Certificate.

J. Foster Alcock, Esq., Northchurch, Berkhamstead, showed a good plant of Catasetum fimbriatum with twelve flowers.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Wiffen), sent a good form of Masdevallia Chimæra.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), exhibited a fine spotted form of Odontoglossum crispum.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), exhibited Odontoglossum crispum guttatum and a distinct and pretty Oncidium from Columbia, without a name.

The Hon. Mrs. Foley, Fordingbridge, Hants, sent a plant of Saccolabium bigibbum.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited Lælia × amœna, a very distinct hybrid from L. pumila ♀ × L. anceps ♂.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent a fine Cattleya granulosa Schofieldiana, and Cypripedium × lucidum with a three-flowered spike.

F. Wheatley, Esq., Ringmore, Teignmouth, sent cut flowers of Cattleya elongata (Alexandræ) and Cattleya Dowiana aurea with nearly white sepals and petals.

A. Witt, Esq., Maida Vale, sent Cypripedium Charlesworthii and C. bellatulum.

Messrs. James Veitch and Sons, Chelsea, received an Award of Merit for the handsome Cattleya × Wendlandiana, described on page 144. They also exhibited C. × Chloris (C. Bowringiana ♀ × C. maxima ♂), Lælio-cattleya × Nysa superba, and a very pretty little hybrid called Sophro-cattleya × læta.

Messrs. F. Sander and Co., St. Albans, exhibited an effective group of good things, including a fine new hybrid Cattleya called C. × Browniæ, derived from C. Harrisoniana ♀ and C. Bowringiana ♂, which received an Award of Merit. The other plants were Dendrobium veratrifolium, D. superbiens, the rare D. Palpebræ, Vanda Kimballiana, the distinct and pretty Pescatorea Dayana, Cycnoches chlorochilon with a six-flowered raceme, Comparettia macroplectron, the singular Warrea tricolor, Oncidium superbiens, two plants of the remarkable Catasetum Christyanum, one with a spike of thirteen very large flowers, the fine Lælio-cattleya × Normanii, Cattleya Loddigesii, and half-a-dozen fine plants of Cattleya labiata.

Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford, staged an effective group of good things, to which a Silver Banksian Medal was awarded. It contained a series of twenty plants of Cypripedium Charlesworthii, showing a wide range of variation in colour, one light-coloured form having the dorsal sepal two and seven-eighth inches broad, and another large plant bearing six flowers. The charming C. × Charles Richman was also included, and two plants of a hybrid derived from C. × Harrisianum ♀ and C. villosum aureum ♂. The unique plant of Odontoglossum Hennisii was also included in the group, together with a

very fine Miltonia Bluntii Lubbersiana, Dendrobium ciliatum, and D. Phalænopsis.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, also received a Silver Banksian Medal for a good group, containing some fine forms of Cattleya labiata, several Lælia pumila, the pretty little Warscewiczella Wailesiana, the rare Dendrobium Palpebræ, which received an Award of Merit, Cypripedium × Bookeri, a fine hybrid raised by Mr. Ayling from C. ciliolare ♀ and C. Spicerianum ♂, which also received an Award of Merit, C. Charlesworthii, Oncidium Forbesii, O. incurvum, and O. macranthum, Vanda cœrulea, Miltonia spectabilis Moreliana, and others.

Mr. P. McArthur, The London Nurseries, Maida Vale, exhibited an effective group, and secured a Silver Banksian Medal. It included several good forms of Cattleya labiata, C. Dowiana aurea, C. Dormaniana, C. granulosa Schofieldiana, Lælia tenebrosa, L. Perrinii, Vanda tricolor, Dendrobium formosum, Cypripedium Chamberlainianum, C. insigne Gortoni, and others.

Messrs. Hugh Low and Co., Clapton, sent two fine plants of Cattleya labiata, one raceme bearing as many as six flowers, a good C. maxima, and three fine forms of Cypripedium Charlesworthii.

Messrs. Cutbush and Son, Highgate, had seventeen pans of Pleione lagenaria, very well bloomed, which were used as a margin to a collection of ornamental foliage plants.

CORRESPONDENCE, &c.

Photographs received, with thanks. R. I. M., Camberwell; W. S. E., Dorking.

H. J. R., Florence. Probably a fine form of Catasetum macrocarpum.

Mrs. M. C., Lymm. Selenipedium longifolium.

M. H. B., Birmingham. Possibly Catasetum albovirens, but material hardly sufficient. Communications must be accompanied by the name and address of the sender.

Odontoglossum × ligulare. A flower received from Major-General E. S. Berkeley, Southampton, with this name is a form of O. × Coradinei, of which O. ligulare has long been considered as a variety. The spike is said to be branching.

A very fine form of Oncidium tigrinum, with lip $1\frac{3}{4}$ inches broad, comes from J. W. Potter, Esq., Park Hill Road, Croydon, also a flower of Aëranthes grandiflorus.

Cattleya elongata. A fine form with broad lip comes from W. M. Appleton, Esq., Weston-super-mare, and other flowers from the collection of T. Statter, Esq., Stand Hill, Whitefield, Manchester.

Mr. J. Cypher, Cheltenham, sends a very fine, dark Dendrobium Phalænopsis Statterianum, which forms a most effective contrast with the light forms mentioned at p. 300. D. bigibbum, D. aqueum, Cattleya maxima, and C. Dowiana aurea, and other seasonable flowers are also included.

We have also received the Catalogue of the Leeds Orchid Company, Roundhay, near Leeds.

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Subscriptions for 1894 have expired.

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THE

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An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

Contents.

	PAGE
Notes	353
Miltonia × Bleuana nobilior. (With Plate.*)	355
Catasetum × splendens	355
Some Cattleya labiata varieties ...	357
Novelties	359
Pleurothallis pernambucensis ...	359
Dendrobium subclausum	359
Megaclinium pusillum	359
Megaclinium triste	359
Cyrtopera flexuosa	359
Stanhopea Randii	359
Stanhopea nigripes	359
Catasetum punctatum	360
Polycycnis Lehmanni	360
Vanda Roeblingiana	360
Galeandra lagoensis	360
Cypripedium × J. Gurney Fowler (Fig. 18)	361
Greenhouse Orchids	361
Abnormal Temperatures	363
Lælia Boothiana and L. crispa ...	363
The Hybridist	365
Epilælia × Hardyana	365
Masdevallia × Jessie Winn... ...	365
Cypripedium × gloriosum	365
Cattleya × Mantinii	365
Calendar of Operations for December	366
Orchid Portraits	370
Continental Notes	371
Orchids at the Royal Horticultural Society	372
Correspondence, &c.	376
To our Readers	376

Title-page and Index.

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THE ORCHID REVIEW.

VOL. II.] *DECEMBER*, 1894. [NO. 24.

NOTES.

THE next meeting of the Royal Horticultural Society (the last of the year) will be held on December 11th, when the Orchid Committee will meet at the usual hour of twelve o'clock, noon.

The two plants of Cattleya × Victoria-Regina previously mentioned in these pages (pp. 7, 293) are both in flower at the present time. Mr. Hamilton, gardener to Hamar Bass, Esq,, Byrkley, Burton-on-Trent, writes that their plant has two spikes of three flowers each, and that the pseudobulbs made this year have each two leaves, while last year they had but one. Mr. Stevens, gardener to W. J. Thompson, Esq., writes respecting the Walton Grange plant. This is interesting confirmation of the facts stated last month, at p. 327.

A figure of Cypripedium Charlesworthii is given in the last number of *Lindenia*, but most unaccountably the name is treated as one which has become current in gardens without recognised authority, and the original description in our pages is relegated to a subordinate position, while the coloured plate is not cited at all.

A splendid raceme of Odontoglossum crispum comes from the collection of W. J. Thompson, Esq., Walton Grange, Stone, bearing seventeen fine flowers. It is a light pink unspotted variety, and affords an excellent example of good culture.

The pretty little Cattleya × Marstersoniæ has just flowered in the collection of the Rt. Hon. J. Chamberlain, Highbury, Moor Green, Birmingham, and a flower has been sent by Mr. Burberry. It is one of Mr. Seden's hybrids, raised from C. Loddigesii ♀ and C. labiata ♂, and most resembles the former, except in the lip, which is much like that of C. labiata.

Respecting Cycnoches Loddigesii, of which the female flower was noted at p. 277, Mr. Lane, gardener to H. J. Elwes, Esq., writes that the plant was brought from Demerara by a friend of Mr. Elwes in 1893, and in the May and June following it produced two female flowers, two males in July, and again two more in October, while the plant has increased in size and promises well for next year. The Kew plant, which flowered last February (p. 65), has also produced two more racemes nine months later, one with five the other with two flowers. It is evidently very floriferous.

Oncidium tigrinum is one of the best and showiest autumn-flowering species, and its showy panicles are particularly welcome. Some fine flowers of it have been sent from the collection of R. Brooman White, Esq., of Ard-darroch, which illustrate this point. The lip is very large, and clear yellow, while the sepals and petals are broadly barred with very dark brown, affording a very effective contrast.

A remarkable example of Cattleya Bowringiana comes from H. J. Ross, Esq., of Florence, in the shape of three flowers fused together. There are three lips in front, five broad petals at the back, and around these seven ordinary sepals. In the centre is a broad flattened column with three perfect anthers. It is very interesting, and from a florist's standpoint very beautiful, being quite double.

The tendency of Selenipedium × Sedeni to produce abnormal flowers is well known. The same thing is sometimes seen in S. × cardinale. A flower at Kew has the staminode suppressed, while the dorsal sepal is divided and the two halves united to either side of the lower sepal. The two petals are united into one, and take the place of the dorsal sepal, while the two ordinary stamens are wanting. There is one perfect anther, which occupies the place of the staminode, and may represent it, though it looks as if the two lateral ones had become united, like the petals, and thus were drawn out of place.

The small beetle known as Otiorhynchus sulcatus we believe seldom troubles Orchid growers much, though its ravages among vines and other succulent plants are well known. A letter received from A. M. Holliday, Esq., of Alderley Edge, Cheshire, however, states that a plant of Vanda Kimballiana had been eaten night after night, in spite of cotton wool with snuff on it, and when the plant was stood in water, the only thing that came out was the above beetle (the specimen being enclosed for identification). Flowers and spikes of Orchids had frequently been eaten, it was at first thought by slugs, but when searching for them with a candle his gardener had frequently found and caught the beetle, which is evidently the marauder. At present it has only been observed in the Cool House. Others may have had a similar experience.

MILTONIA × BLEUANA NOBILIOR.

(*See* FRONTISPIECE.)

FOLLOWING the precedent established in our first volume, when we gave a coloured plate of the new and beautiful Cypripedium Charlesworthii, we now present our readers with a collotype reproduction of a photograph of the charming Miltonia × Bleuana nobilior, from a plant grown by Messrs. F. Sander and Co., St. Albans. The photograph, which is an excellent one in every respect, was taken by Mr. H. Thomas, photographer, of St. Albans, and was kindly communicated by Messrs. Sander for this work.

Miltonia × Bleuana, it will be remembered, is a hybrid which was obtained by M. Alfred Bleu, of Paris, from M. vexillaria ♀ and M. Roezlii ♂. The cross was effected in June, 1883, the seed matured and was sown in the following April; while in January, 1889, four of the plants were in flower; the plants then being four years and nine months old. Two years later, plants of the same cross flowered in the establishment of Messrs. James Veitch and Sons, of Chelsea, from a cross effected by Mr. Seden, the seed having been sown in January, 1885. The offspring may be said briefly to have almost the vegetative characters of the mother plant, with the flowers as much resembling those of the other parent, especially in colour, though the influence of M. vexillaria is also apparent on careful comparison.

The different seedlings showed certain variations between themselves from the very outset; one which had the disc of the lip bright yellow being called variety aurea, and another with several radiating light brown lines on the same, var. splendens. The variety nobilior (O'Brien in *Gard. Chron.*, 1894, i. p. 366) has a large reddish-brown blotch on the disc, which in front extends into short radiating teeth, as shown in the illustration. The flowers are white, with the lower halves of the petals beautiful light rose-purple, and the base of the lip chrome yellow with some brown radiating nerves. We believe that it was obtained from M. A. A. Peeters, of Brussels, and is one of M. Bleu's original batch of seedlings. It is certainly a most charming plant, and the beautiful effect of its four racemes and fifteen flowers is well shown in our illustration.

CATASETUM × SPLENDENS.

DURING the last few months a curious Catasetum has appeared in four or five different collections having much of the general appearance of a yellow C. macrocarpum but with a much more expanded lip. The difference was obvious, yet the resemblance to C. macrocarpum was so great that I took it to be only a peculiar variety. In one or two instances the plants were

purchased as C. Bungerothii. Then one flowered with Messrs. Hugh Low and Co., at Clapton, which had been obtained as C. Bungerothii, though on flowering it presented two or three anomalous features, which led them to suspect that it was a natural hybrid between that species and C. macrocarpum. Almost immediately afterwards came the remarkable group exhibited by Messrs. Linden, L'Horticulture Internationale, Brussels, at the meeting of the Royal Horticultural Society, on November 13th, to which a Silver Banksian Medal was awarded. Besides examples to the two species just named, it included a series of curiously intermediate forms, which are evidently natural hybrids between the two species named, which have long been known to grow in the same district. The new material adds an additional chapter to the history of this remarkable genus. The plants were exhibited under four different names, but I believe all, including those mentioned above, have originated from the same parentage, and thus may be considered as varieties of one hybrid, for which the name of C. × splendens, Cogn., may be retained, the others being placed as varieties of it.

C. × splendens has flowers approaching C. Bungerothii, both in form and colour, but a little smaller, the spur rather more conical, deep yellow inside, and a trace of the thick callus in front of the lip, which is so characteristic of C. macrocarpum. C. × s. viride has the flowers slightly flushed with pale green, and the callus a little more developed. C. × s. regale is near the preceding, but has a trace of purple marbling at the base of the petals, while the inside of the lip is marbled and partially suffused with red-purple. C. × s. aurantiacum has deep yellow flowers, with a few small purple spots on the sepals and petals, the structure being similar to that of the typical form.

C. × s. Luciani (exhibited as C. Luciani) has the lip much like C. Bungerothii, but the sepals and petals approaching C. macrocarpum, both in shape and colour.

C. × s. maculatum (exhibited as C. Lindeni) has the sepals and petals densely and beautifully spotted with red-purple, arranged somewhat in transverse lines, and a lip closely resembling C. Bungerothii. Thus it almost combines the lip of one parent with the sepals and petals of the other. A succeeding variety explains why the name is changed.

C. × s. O'Brienianum (exhibited as C. O'Brienianum) has the sepals and petals almost identical with C. × s. Luciani, and the lip ivory-white, but galeate, with the mouth only an inch across, and with denticulate margin; thus approaching C. macrocarpum in shape.

C. × s. Lindeni (C. macrocarpum var. Lindeni, O'Brien in *Gard. Chron.*, 1894, ii. p. 306; *Journ. des Orch.*, v. pp. 205, 206, fig. 76; *Lindenia*, x. p. 23, t. 442) has the sepals and petals of C. macrocarpum, but the lip intermediate in shape, one and a half inches broad, somewhat three-lobed, and with well developed callus, the colour being yellow, with the basal half, and a forward

extension near either margin, rich purple-crimson, as in some of the dark forms of C. macrocarpum.

Lastly, comes a form with flowers almost like the preceding in shape, but yellow in colour, which has flowered with H. J. Ross, Esq., of Florence; W. J. Thompson, Esq., Walton Grange, Stone, and at one or two other places. It may be called C. × s. flavescens. I had formerly thought it to be an anomalous variety of C. macrocarpum with an open lip.

Here we find a number of very remarkable forms, representing almost a transition series between two common and very distinct species, with which they are found growing; and the conclusion is forced upon one that they have arisen by intercrossing through insect agency. The peculiar way in which the characters are combined, some forms approaching one species, some the other, while the remainder present curious combinations of the two, is only paralleled among hybrids. Distinct as some of them may appear, they are evidently varieties of one, and should be treated as such. I know of no more instructive series, and it is much to be hoped that their appearance may help to popularise a very remarkable but somewhat neglected genus.

R. A. Rolfe.

SOME CATTLEYA LABIATA VARIETIES.

Among the large importations of Cattleya labiata made during the last few years, a number of very beautiful varieties have appeared. Some have already been mentioned in our pages, and now we have received several others, whose characters it is desirable to record. Besides those specially mentioned are several others from different correspondents which may be considered as well developed examples of the typical form, of which there are many in cultivation. One particularly fine one comes from R. Brooman White, Esq., of Arddarroch, whose petals measure rather over three and three-quarter inches long, and the front lobe of the lip one and seven-eighth inches broad. Such a form might well be called C. labiata superba. There has been a fine display to this grand old plant in this collection during the present autumn, and indeed in many others which we could enumerate.

C. l. Hardyana is a brilliant flamed variety which has flowered in the establishment of Messrs. Hugh Low and Co., of Clapton. It approaches C. l. Peetersii (*supra*, p. 78), but is not so heavily saturated with crimson, which colour does not extend down the ovary, as in that one. The flower is well formed and of good size, the petals being beautifully flamed with broad crimson bands and blotches on the rosy lilac ground; the sepals even more heavily marked, and the sides of the lip also marbled and streaked with the same colour. It is very bright and attractive, and is certainly a great acquisition.

C. l. Sanderæ, according to a flower from the collection of R. Brooman White, Esq., Arddarroch, Garelochead, Dumbartonshire (gr. Mr. Roberts), is a beautiful white form differing from C. l. elegans (*supra*, I. p. 360) in having the crimson-purple, somewhat feathered blotch only half as broad as the lip, thus leaving a very broad white margin, which is slightly flushed with pale rosy lilac. The side lobes are also lightly veined with the same colour.

The one called R. I. Measures's variety is nearly an albino, and a most charming thing it is. The usual yellow disc is reduced to a pale primrose tint, and the front lobe of the lip beautifully veined with light pink on a white ground. A flower has been sent by Mr. H. Chapman, gr. to R. I. Measures, Esq., Cambridge Lodge, Camberwell. It is very distinct and beautiful.

C. l. delicata is a charming light variety from the collection of W. J. Thompson, Esq., Walton Grange, Stone, Staffs., sent by Mr. Stevens. The front lobe of the lip is beautifully reticulated with slaty lilac nerves on a lighter ground, and the disc very light yellow. The rest of the flower is nearly white, with just a tinge of pale lilac. It is well shaped, and altogether a very distinct and attractive variety.

C. l. Youngiana is a remarkable variety, in which the petals approach the lip in shape, except that they are flat and recurved, and further, they have a smaller crimson-purple blotch at the apex. The dorsal sepal is similar in shape, over an inch and a half broad, with a rather smaller purple blotch, while the peculiarity also extends to the lateral sepals in a somewhat smaller degree. The lip and column are normal. We have received a flower and photographs of this handsome form from Reginald Young, Esq., Sefton Park, Liverpool.

A very remarkable pelioriate form has appeared with Messrs. Collins and Collins, Cumberland Park Nurseries, Willesden, and was exhibited at the Royal Horticultural Society's meeting on November 13th last. The raceme bore two quite different flowers. The first was a perfectly regular peloria, having three rosy lilac petals, quite uniform in shape and colour, and a straight triquetrous column, with three perfect anthers, but no stigma. The sepals were quite normal. The uppermost bloom had two lips, a little shorter than usual, one quite perfect and the other nearly so, while the third inner segment was an ordinary petal in every respect, except that it was short and broad, and of the same dimensions as the two lips. The column was shorter than in the other flower, without anthers, but with a single nearly terminal stigma. The example is very interesting and instructive, and helps to confirm the theory that the lip is developed at the expense of the anthers. The three anthers developed were those of the outer staminal whorl.

NOVELTIES.

PLEUROTHALLIS PERNAMBUCENSIS, Rolfe.—A small species which appeared in a clump of Cattleya labiata, introduced from Pernambuco in the establishment of Messrs. W. L. Lewis and Co., Southgate, flowering in June last. It is allied to the West Indian P. testæfolia, Lindl., of the section Apodæ prorepentes, and has few-flowered racemes of pale yellowish green flowers stained and speckled with light rosy purple.—*Kew Bulletin*, 1894, p. 361.

DENDROBIUM SUBCLAUSUM, Rolfe.—A brilliantly-coloured Moluccan species, which flowered in the establishment of Messrs. James Veitch and Sons, of Chelsea, in July last. It belongs to the section Pedilonum, and has bright cinnabar-orange flowers three-quarters of an inch long, and a lip with infolded apex so as to nearly close the flower; in allusion to which the name is given.—*Kew Bulletin*, 1894, p. 361.

MEGACLINIUM PUSILLUM, Rolfe.—An East Tropical African species which flowered at Glasnevin, under the care of Mr. F. W. Moore, A.L.S., in June last. It is allied to M. melanorachis, Rchb. f., and has a light green rachis marbled with purple-brown, and rather darker flowers.—*Kew Bulletin*, 1894, p. 362.

MEGACLINIUM TRISTE, Rolfe.—A remarkable species which flowered at Kew in August last, and is believed to have been sent with a few other African Orchids by M. Godefroy Lebeuf, of Argenteuil, France. Its affinity is with M. leucorachis, Rolfe, though both the flowers and rachis are dull blackish in colour, and thus it is a very distinct species.—*Kew Bulletin*, 1894, p. 362.

CYRTOPERA FLEXUOSA, Rolfe.—A native of Mt. Kilimanjaro, East Africa, which flowered at Kew from May to August of the present year. Instead of subterranean rhizomes, it has äerial pseudobulbs, evergreen grass-like leaves, and flexuose scapes terminating in a short raceme of white flowers, with some purple spots and a light yellow disc.—*Kew Bulletin*, 1894, p. 363.

STANHOPEA RANDII, Rolfe.—A distinct and remarkable species from the Amazon delta, which flowered in the collection of E. S. Rand, Esq., of Pará, Brazil. It is allied to S. eburnea, Lindl., but has much smaller, ivory-white, scented flowers, and the mouth of the hypochil reduced to a small transverse slit, with an erect horn on either side. The cavity is crowded with small papillæ, which are doubtless connected with the insect which fertilises it. Mr. Rand describes it as very beautiful.—*Kew Bulletin*, 1894, p. 363.

STANHOPEA NIGRIPES, Rolfe.—A very handsome species allied to S. Wardii, Lodd. and S. Ruckeri, Lindl. It has large yellow flowers with ring-like purple spots, and the base of the hypochil deep purple-black. It flowered at Kew in August, 1893, and again a year later, having been

purchased at a sale in 1892 without any note of its origin.—*Kew Bulletin*, 1894, p. 364.

CATASETUM PUNCTATUM, Rolfe.—A Brazilian species, introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, and flowered in their establishment in July last. It is allied to C. albovirens, Rodr., and has yellowish green aromatic flowers, which are spotted with brown on the sepals and petals.—*Kew Bulletin*, 1894, p. 364.

POLYCYCNIS LEHMANNI, Rolfe.—A pretty New Granadan species, introduced by Mr. F. C. Lehmann, which flowered in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, in August last. It is allied to P. barbata, Rchb. f., and has light tawny-brown flowers spotted with purple, the lip being lighter with darker spots, and the disc hairy.—*Kew Bulletin*, 1894, p. 365.

VANDA ROEBLINGIANA, Rolfe.—A remarkable species, introduced from the vicinity of Singapore by Messrs. Hugh Low and Co., of Clapton, with whom it flowered in July last. It is allied to V. limbata, Blume, and V. brunnea, Rchb. f., but differs from every other in having the narrow lip dilated in front into a pair of large spreading halbert-shaped lobes. The flowers are deep brown, irregularly veined with yellowish green, except the side lobes, which are white, streaked with purple. A single plant only is at present known, which produced eight spikes of flowers. It is dedicated to the Hon. C. G. Roebling, Trenton, New Jersey, U.S.A.—*Kew Bulletin*, 1894, p. 365.

GALEANDRA LAGOENSIS.

This is the latest addition to the cultivated species of Galeandra, having flowered for the first time at St. Albans early in the present year, and again some time later, as on July 24th, it received an Award of Merit from the Royal Horticultural Society. It was described, however, in 1881 (Rchb. f. and Warm. in *Otia Bot. Hamb.*, p. 88) from dried specimens collected at Lagoa Santa in the province of Minas Geraes, Brazil, by Dr. Eugene Warming, and somewhat later a figure appeared (Warm. in *Vidensk Medd. Kjobenh.*, 1884–86, p. 87, t. 6, fig. 6). As long previously as 1850 it was found near Santarem, on the Upper Amazon, by Spruce, though it does not appear to have been previously described. It was introduced to cultivation by Messrs. F. Sander and Co., of St. Albans, who obtained plants from the Rio San Francisco, Brazil. Thus it would appear to be rather widely diffused, for the specimens from these different localities are so much alike, and so different from any other species of the genus, as to leave little doubt of their specific identity. It is an interesting addition to the list of cultivated species.

CYPRIPEDIUM × J. GURNEY FOWLER.

THIS pretty little Cypripedium is one which was raised from C. Godefroyæ and C. barbatum, the latter being the pollen parent. It was sent out by Messrs. Hugh Low and Co., Clapton Nursery, during last summer, who also exhibited it at a meeting of the Royal Horticultural Society on March 27th. The photograph here reproduced was taken and kindly forwarded by Mr. G. I' Anson, of the same establishment, and shows clearly its general character. It is obviously allied to C. × Tautzianum, a charming

Fig. 18. CYPRIPEDIUM × J. GURNEY FOWLER.

little hybrid raised by Messrs. Veitch from (C. niveum ♀ × C. barbatum ♂). We hope to be favoured with a flower during the coming season. As regards colour, we may briefly state that it is flushed with rose and spotted with dark purple on a light ground. It is a pretty little plant, of dwarf habit, and is dedicated to J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex.

GREENHOUSE ORCHIDS.

YOUR correspondent "Argus," in last month's issue of THE ORCHID REVIEW (p. 327), expresses a hope that more hardy Cypripediums of C. insigne parentage may be raised for the cold greenhouse. It is an inter-

esting fact that, so far as I have observed, Cypripedium × Leeanum does much better in the cold house, so that the Spicerianum blood does not at all interfere with its hardiness. A basket of Vanda cœrulea, grown as I tried to describe it the other day in my lecture at the Drill Hall, is now in bloom here, and finer than usual. It has seven long spikes of huge deeply coloured flowers, from thirteen to fourteen each, the blooms touching in some cases five inches across. I have never seen this Orchid good near any large town or in any smoky neighbourhood. I believe that position, treatment, and air, have more to do with the size and colour of this Orchid than variety, and I intend to get some so-called bad forms and see what happens, as I have never had possession of such as I see in some other gardens, where conditions may not be quite so favourable. Nothing grows freer than the old Oncidium incurvum, which I may say has gone on for more than a generation. It is a capital plant for the greenhouse. Oncidium crispum, however, is a plant which I find difficult to grow.

EDWARD H. WOODALL.

St. Nicholas House, Scarborough.

[We should say that Vanda cœrulea is unquestionably a cool Orchid, as we pointed out in detail at p. 306 of our last volume, and we are glad to receive this confirmation of the fact. It grows in the Khasia Hills at a little lower elevation than Cypripedium insigne, and therefore cannot require a very different climate. But there is a certain amount of variation in the species, both in size and colour, and some of the Burmese forms are a distinct improvement on the Khasian ones. We suspect our correspondent has the latter. With regard to culture, Dr. (now Sir Joseph) Hooker points out in his *Himalayan Journals*, how totally at variance with its native habitat in the Khasia Hills is the cultivation thought necessary for it in England. "The dry grassy hills which it inhabitats are elevated 3,000 to 4,000 feet; the trees are small, gnarled, and very sparingly leafy, so that the Vanda which grows on their limbs is fully exposed to sun, rain, and wind. There is no moss or lichen on the branches with the Vanda, whose roots sprawl over the rough bark. The atmosphere is, on the whole, humid, and extremely so during the rains; but there is no damp heat or stagnation of the air, and at the flowering season the temperature ranges between 60° and 80°, there is much sunshine, and both air and bark are dry during the day. In July and August, during the rains, the temperature is a little higher than above, but in winter it falls much lower, and hoar frost forms on the ground." Somewhat similar conditions prevail where it grows in the Shan Hills, and those who do not succeed with it should modify their treatment in accordance with the above.—ED.]

ABNORMAL TEMPERATURES.

The changes of our climate are most astonishing, for a day or two ago I instructed my gardener to remove all the blinds off my Orchid houses, as I thought that, in our smoky district, there would not be any possible need for them. I was mistaken, for to-day, November 4th, we have had one of the most brilliantly sunny days of the season, and our various temperatures have ruled very high, viz. :—

East Indian House, South aspect, 83° Fahr.
Cypripedium House, warm, East, 77°.
Cypripedium House, warm, East and West, 76°.
Dendrobium House, East and West, 76°.
Cattleya House, South, 75°.
Intermediate House, South, 77°.
Odontoglossum Houses, East and West, 65° and 63°.

The outside temperature in the shade was 53°, and all the top and bottom ventilators were wide open.

O. O. WRIGLEY.

Bridge Hall, Bury, Lancashire.

LÆLIA BOOTHIANA AND L. CRISPA.

I have a rather rare Orchid which has been out a month, and has maintained its delightful perfume up to now. In the *Orchid Grower's Manual* it is called Cattleya lobata, but it also has the names of Lælia Boothiana and L. lobata. It should flower in May, but one new bulb has sent a spike of two flowers, while the two other new ones look as if they would flower later. I consider it a very beautiful thing, and think it a pity that there should be so much difference of opinion about it. I enclose a flower, from which you will see that there are eight pollen sacs, **and therefore the plant is a Lælia.**

A few months ago I flowered a "Cattleya crispa" which had held its sheaths dormant for eighteen months or two years, but this summer they have come out. I was surprised to find it also had eight pollen sacs, which should be sufficient to fix its position as a Lælia. I think here is sufficient interesting matter for an article in the ORCHID REVIEW.

E. ASHWORTH.

Harefield Hall, Wilmslow.

[Both these plants are unquestionably Lælias, and such they ought to be called, though originally described as Cattleyas, before the limits of the two genera were properly understood—the latter, indeed, before the genus

Lælia was established. The former was introduced by Messrs. Loddiges, of Hackney, with whom it flowered in 1847, and a year later Lindley described it as Cattleya lobata, evidently without examining the pollen. In 1855 Reichenbach described Lælia Boothiana, from a plant in the collection of Messrs. Booth, of Hamburg, where it had existed for many years without flowering, but it ultimately proved identical with Lindley's plant. The former name having proved erroneous, the proper course would apparently be to adopt the latter, and no necessity should exist for a third name. But continental botanists, following the zoological method, retain the oldest specific name under all circumstances, and it was in conformity with this system that Messrs. Veitch, in their *Manual of Orchidaceous Plants*, gave the new name of Lælia lobata. Most English botanists adopt the oldest correct name, and this system is followed in the *Index Kewensis*—hence Lælia Boothiana—but whether this system will ultimately prevail we do not venture to prophecy. It is certainly a handsome species with sweetly scented flowers, and deserves to be better known. Mr. Ashworth's plant is flowering curiously out of season, though we cannot say why, and hope its behaviour will be noted next year.—ED.]

THE HYBRIDIST.

EPILÆLIA × HARDYANA.

THIS very remarkable generic hybrid was exhibited by Messrs. F. Sander and Co., St. Albans, at the Royal Horticultural Society's meeting on November 13th last, when it received an Award of Merit. It was derived from Epidendrum ciliare and Lælia anceps, the former, according to a letter from Mr. Sander, dated February 24, 1891, being the seed parent. Its history is thus further given. It is a cross made by Mr. Joly, gardener to Baron Nathaniel Rothschild, Vienna, and is now four years old, and flowering for the second time. Thus it appears to have been raised in 1887. We do not know whether the cross has been raised a second time, but the pseudobulb, leaf, and two-flowered raceme originally sent are like those of the plant exhibited. It is fairly intermediate in character. The pseudobulbs are most like the Epidendrum parent, except that the majority bear two leaves, as in the Lælia. The scape is rather short, and two-flowered, the sepals and petals narrowly lanceolate-oblong, and the lip three-lobed, with a broadly elliptical or subcordate, undulate front lobe, separated by a short isthmus from the semi-oblong infolded side lobes. The colour is very light blush pink, almost blush-white, except the front lobe of the lip and the tip of the side lobes, which are rich crimson-purple. The only trace of the ciliate front lobe of the Epidendrum in the hybrid is a rather obscure denticulation on the margin, though the undulation is probably due to the

same influence. On the whole, the hybrid inclines most to the Epidendrum parent in shape, with the exceptions pointed out, and to the Lælia in colour. It is a very graceful and pretty little hybrid, and particularly interesting on account of the distinctness of the two parents. Though named long ago, we think it has not been previously recorded.

MASDEVALLIA × JESSIE WINN.

This is a pretty little hybrid raised in the collection of C. Winn, Esq., The Uplands, Selly Hill, Birmingham, from Masdevallia tovarensis ♀ and M. Davisii ♂, which has much of the general shape of M. × Measuresiana (tovarensis ♀ × amabilis ♂), though the colour is very light yellow, approaching creamy white. The flower inclines to M. tovarensis in shape rather than to the other parent, but the peduncle is terete as in M. Davisii. It is, however, smaller than either of them, which only proves that it is not yet fully developed, which is almost invariably the case at the first time of flowering. The plant is quite small at present. There is a little trace of purple at the base of the perianth, as in the mother plant. It is an interesting little plant, which we hope to see again.

CYPRIPEDIUM × GLORIOSUM.

An attractive hybrid derived from Cypripedium insigne Chantini ♀ and C. × Io grande ♂, for which T. Statter Esq., Stand Hall, Whitefield, Manchester, received an Award of Merit from the R.H.S., on October 9th last. It has much of the general shape of C. × Arthurianum. The dorsal sepal is light green, lined with pale brown, and a broad white margin, and the lip and petals suffused with very light purple. It is a delicately coloured and very pretty hybrid.

CATTLEYA × MANTINII.

This is a most interesting and beautiful hybrid raised by M. Georges Mantin, Chateau de Bel Air, Olivet, France, from Cattleya Bowringiana ♀ and C. Dowiana aurea ♂. The cross was made in 1889, the seed sown the following year, and the first flowers were produced in October, 1894. Photographs received show two plants, one with a three-flowered raceme, the other with two. The flowers are large, and approach those of the pollen parent in shape. The sepals and petals are rose-purple, the front lobe of the lip being much darker and very richly coloured, and the disc traversed with some golden yellow lines. The majority of the pseudobulbs are two-leaved, as in the mother plant, but one of the plants has the two oldest ones monophyllous, as in the pollen parent. It is a very handsome thing, and has flowered at the comparatively early age of four years, so

that it will probably improve considerably on attaining its full development. C. Bowringiana, from its free habit and numerous flowers, is a very promising parent, and it is not improbable that we may soon hear of several other crosses from it.

CALENDAR OF OPERATIONS FOR DECEMBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

TEMPERATURES for this month should range as follows, always allowing a rise with sun heat.

COOL HOUSE.—Day 55°, night 50°, morning 45°.

INTERMEDIATE HOUSE.—Day 60° to 65°, night 55° to 60°, morning 53° to 55°.

EAST INDIAN HOUSE.—Day 65° to 70°, night 60° to 65°, morning 58° to 60°.

We are now in the depth of winter, and many Orchids are resting, while the growth of others seems almost at a standstill. Under these circumstances all good cultivators will be contented, their sole aim this month being to keep what growths the plants have already made in a sound and healthy condition, rather than to increase the size of the plant. Keep the temperatures steady; do not try to force matters by giving too much heat and moisture, but, on the other hand, avoid any excess of aridity, for such I believe is unnatural in their native habitats, and I know is harmful under cultivation. We must not forget that although it may not rain for many months during their dry season, the heavy dews at night serve to water and refresh vegetation, the air never becoming parched. It will therefore be necessary to damp down once or twice a day as may seem necessary, and this will cause the hygrometer to register about three degrees below the temperature.

Do not hurry the winter and early spring flowering Dendrobiums. It is quite possible to have some of them in flower by the end of this month, but it is much too early, February or the beginning of March being a much better time, if the health of the plants be considered. I refer to such species as D. Wardianum, D. nobile and others, the flowers of which, when forced too much, are fewer in number and inferior in quality to those opening at a later date. As a useful and accommodating species there is no doubt that Dendrobium nobile takes the premier place; for it is more amenable than any other in the matter of being brought into bloom at a given date, either early or late. If many plants are grown, those which have completed their pseudobulbs first, and of which the flower buds are consequently most advanced, should be selected and placed in the intermediate house, and

watered very sparingly, the warmth and moisture of this house being all that is required for a time. If Dendrobiums are given too much warmth and water at first the flower buds either turn to growths or become blind. Plants started now should flower in January. In point of beauty, too, D. nobile is difficult to surpass, and the hybrids from it, which are numerous, are an exceedingly useful class to grow, they all having the robust constitution, free growth, and accommodating qualities of D. nobile, in a more or less degree. Prior to starting the plants, trim off aged and useless pseudobulbs, as after about the third year they are of little service to the leading portion, and may be removed. If desired to increase the stock, these old pseudobulbs should be cut in lengths of about three inches, and laid on damp sphagnum, when they propagate freely. The remaining bulbs should be well cleaned with a sponge to remove all traces of red spider.

The short bulbed Mexican Lælias will make a good show of bloom this month. After blooming they enjoy a good rest, and in order that the air may circulate freely round them, they are best suspended, if only for a month or two. The deciduous Calanthes will also be at their best, and the flowers will last in better condition if the plants are placed in intermediate temperature, and watered sparingly. Phalænopsis amabilis (grandiflora) and P. Aphrodite will also contribute their share of bloom, and are most useful at this season. Weakly plants should not be allowed to flower, as like all other Orchids, their sterling beauty is never seen until they have sufficient vigour to produce strong spikes. There is little or no fear of getting the temperature too hot for Phalænopsis, but the atmosphere should be moist and well ventilated throughout the year. Water during the winter with moderation. Angræcums are always beautiful and interesting, and many are now pushing flower spikes. These also delight in a moist, warm atmosphere. Cattleya Percivaliana is now showing for flower, and if subjected to a low temperature the buds fail to come to maturity. A steady warmth of about 60° is best. When Cattleyas are pushing for flower do not keep them too dry, but water moderately.

The pretty little Sophronitis grandiflora will soon unfold its bright-coloured blossoms. I have previously advised a slightly warmer temperature than that afforded in the coolest house for this, which is well suited in a shady and very moist house. The species of Sophronitis do not take well to root disturbance, but repotting must occasionally be done. Small pans or baskets suspended are the best, and repotting should take place as soon as the flowers have faded. A variety known as S. grandiflora purpurea is very beautiful, but the flowers are much shorter lived than the typical form. It differs also from the latter in growth, chiefly by the pseudobulbs being inclined to be flat and the leaves of greater substance besides, and having a more depressed style of growth. This variety is not nearly so hardy, and requires the warmth of the intermediate house.

Pleiones should be repotted as soon as the flowers are past, as root action commences at once. Well-drained pans or baskets should be used, and chopped peat and sphagnum moss, with a liberal addition of coarse sand, is a capital compost. The pseudobulbs, after having been freed from useless matter, should be dibbled in at a distance of about an inch apart. The compost should be made moderately firm, and after being surfaced over with sphagnum moss between the bulbs the pans should be suspended in an airy cold house, such as where Dendrobiums are resting. Should any of the bulbs become loose they must be promptly secured, so that the new roots on pushing out may take hold firmly. Keep the compost slightly moist only.

When newly imported Orchids are purchased it generally happens that there are many ill-shaped specimens amongst them, and if potted up just as they are would make anything but handsome plants. An enormous quantity of that beautiful Dendrobium Phalænopsis has recently gone under the hammer, or been otherwise distributed. The pseudobulbs are remarkable for stoutness and great length, otherwise the plant is a compact grower and rarely require remodelling. It simply requires to be made secure in small pans or baskets, and placed in the warmest house. It is an Orchid that delights in plenty of warmth at all times. Such plants, on the other hand, as Oncidium crispum, Cattleya Harrisoniana, and others having a more creeping rhizome, are sometimes imported in huge clumps, shaped like the tree or rock from which they were collected. The average inexperienced grower is apt to be fearful to separate the mass, and selects a piece of wood on which he fastens the plant, afterwards either suspending the block or fixing it upright in a pot. This is very bad practice; for although growth may be free for a time it is not for long, and when afterwards the plant is repotted it rarely ever grows well again, not nearly so well as those which are re-modelled in the first instance, so that the compost is well up to the leading growths, for the new roots to enter direct. In remodelling a plant the various portions should be placed together so as to form a well-shaped and pleasing specimen.

Habenaria militaris and H. carnea should now occupy a position on a shelf, or be suspended in a warm house, where they will rest and the stem gradually die down. They must be kept moderately dry or the tubers will rot. On the other hand, if allowed to remain dust dry too long the tubers will shrivel up, and therefore enough water should be supplied to keep them plump. For the successful culture of these charming little Orchids we are greatly indebted to Mr. W. H. White, grower to Sir Trevor Lawrence, Bart., who placed before the readers of the ORCHID REVIEW, for the month of March of last year, a detailed article upon their culture (Vol. I. p. 83). In early spring activity again sets in, when the tubers should be repotted. It seems probable that with Habenarias a fertile field is open to the hybridist.

H. militaris is certainly a most effective Orchid when in flower, and if crossed would most likely bring forth some good things. What if we could get some half hardy strain by fertilising it with the pretty, white British species figured in *Nicholson's Dictionary of Gardening*? There is, however, one great difficulty in the way, as the former blooms in September and the latter in June. This hardy species I believe is not common in these islands. Once only have I seen it growing naturally, and then I came upon a fine bed of probably three dozen plants, growing luxuriantly beneath the partial shade of a large beech tree, having an eastern aspect, on the chalky hills of Surrey, although I am intimately acquainted with many of the Surrey Hills. But unfortunately I was not discreet. Being young and so delighted with my find, I made no secret of its whereabouts, and there is no doubt in my mind that by this time Habenaria chlorantha, with its slender spur and its pure white lip, has been completely exterminated from its habitat beneath that particular beech tree.

Cypripedium Calceolus is said to be a native Orchid, though I fear that very few plants are now to be found wild in England. I would point out the utter absurdity of hastening with a trowel to ruthlessly dig up these British gems the moment their bright flowers betray them. They cannot then safely be transplanted, and are almost sure to die. If it is desired to collect them, the exact spot should be marked, so that the tuber or root can be found in the winter when the stem has withered. About February would be a good time to take them up.

A correspondent, who, by the way, is an amateur Orchid grower of many years' standing, has just lost one of his best Cattleyas, and "is utterly at a loss to account for it, and why one plant in a hundred should die and the others remain healthy, beats me," he writes. "All the young growths are black and rotting," which is bad news, but it is one of those occurrences to which all Orchid growers are liable. No one can say how this disease can be absolutely avoided, not even the most skilful, and having the most favourable means at command. But I do maintain that such mishaps may be reduced to a minimum, under the influence of good cultivation. It is with this in view that practical growers are for ever urging the true principles of culture, upon which depends so much the building up of healthy constitutions in their plants. The most important points are warmth, moisture, air, light, shade, and rest; all of which are essential, but must be applied in accordance with the time of year and the condition of the plants. I have heard some growers ridicule such cultural directions as whimsical and over exact, but they are those who have started with strong, newly imported plants, and found to their surprise how easily they grew. Time alone has proved to them the difference between right and wrong. Orchids, like other plants and animals, are liable to disease, and attention to their requirements is the best means of keeping it in check, though it cannot

be prevented altogether. In the case of very rare and valuable plants it is best to secure an off-set at the first opportunity, so that in case of a mishap there is a spare string to the bow. Most Orchids propagate freely enough from the old pseudobulbs when the connecting rhizome is severed between the back bulbs and the leading ones, of course leaving a reasonable number to support the leading growth.

Another amateur, who is evidently a recruit to the ranks, has several Cattleya Gaskelliana "which have made their growths and formed their sheaths, but show no sign of pushing spikes. Should I rest them or keep them growing?" Generally speaking, a Cattleya having formed a sheath will in due time push its flower; though sometimes it fails to do so; and occasionally they will push a spike without a sheath. C. Trianæ, C. Mendelii and C. Mossiæ often flower without the sheath, and on that account, if the last new bulb is minus a sheath, care should be taken when cleaning not to touch the point from whence the spike would issue. But in the case of Cattleya Gaskelliana, with or without a sheath, if the flowers do not push directly the pseudobulbs are completed, there is no hope that they will do so afterwards, and the plants should be treated exactly like those which have flowered.

Step by step the Orchidist finds for his plants places that are most favourable to growth, and having done this it is well to be cautious before removing them again, unless for the purpose of resting. Of course a suitable temperature is the main thing, though a suitable position for a plant is far more important than is generally thought, and I would recommend new beginners to be particularly observant in this matter of positions, for it can soon be seen if a plant is "at home" or otherwise.

ORCHID PORTRAITS.

Catasetum macrocarpum var. Lindeni, O'Brien.—*Lindenia*, t. 442.

Cattleya Cupidon, Hort.—*Lindenia*, t. 440. This is a form of C. Mendelii.

Cattleya guttata.—*Lindenia*, t. 441. The plant here figured is not Cattleya guttata, Lindl., but C. Leopoldi, Versch., and apparently the variety pernambucensis.

Cattleya Mossiæ var. Treyeranæ.—*Lindenia*, t. 438.

Cypripedium Charlesworthii, Rolfe.—*Lindenia*, t. 443.

Cypripedium × Denisianum.—*Lindenia*, t. 437.

Dendrobium Cœlogyne, Rchb. f.—*Gard. Mag.*, Nov. 3, p. 658, with fig.

Dendrobium Harveyanum, Rchb. f.—*Gard. Chron.*, Nov. 17, p. 593 fig. 76.

MILTONIA × BLEUANA ROSEA.—*Gard. Mag.*, Oct. 27, p. 637, with fig.

MORMODES COGNIAUXII, L. Lind.—*Lindenia*, t. 444.

ODONTOGLOSSUM CRISPUM FRANZ MASEREEL.—*Journ. of Hort.*, Nov. 22, p. 467, fig. 71.

ODONTOGLOSSUM PESCATOREI VAR. PRINCE OF ORANGE.—*Lindenia*, t. 439. This is O. × excellens, Rchb. f.

ONCIDIUM ORNITHORHYNCHUM ALBUM.—*Journ. of Hort.*, Nov. 1, p. 399, fig. 62.

ORNITHOCHILUS FUSCUS, Wall.—*Bot. Mag.*, t. 7385.

STENOGLOTTIS FIMBRIATA.—*Gard. Mag.*, Oct. 27, p. 642, with fig.

STENOGLOTTIS LONGIFOLIA, Hook. f.—*Gard. Chron.*, Nov. 10, p. 563, fig. 72.

CONTINENTAL NOTES.

BY CH. DE BOSSCHERE.

AT the Chrysanthemum Show which closed the International Exhibition at Antwerp, M. Ch. Vuylsteke, of Loochristy, surrounded the statues of the King and Queen of the Belgians with a group of beautiful Orchids, producing a very beautiful effect. M. Jules Hye-Leysen exhibited the beautiful Miltonia vexillaria Leopoldiana, Cattleya × Hardyana, Cypripedium × Albertianum, and C. × Annie Measures.

At Gand, also at the Chrysanthemum Show, there was a good number of Orchids, including an interesting group of Cattleya labiata from M. Metdepenningens, an excellent collection of Cypripediums from M. J. Moens, and a beautiful dark Vanda cœrulea and Lælio-cattleya × Gottoiana Hyeana, from M. Jules Hye-Leysen.

The meeting of the Orchidéene, of Brussels, was particularly interesting. Cattleya Warscewiczii Leopold II., from the Royal Gardens at Lacken, was an object of general admiration, and received a First-class Diploma of Honour. The flowers are pure white, except the front part of the lip, which is deep velvety purple, and the two yellow eyes gradually passing into white, and encircled by a lilac border.

About twenty supposed natural hybrids between Catasetum Bungerothii and C. macrocarpum were exhibited by Messrs. Linden. The forms were very varied, and the colours ranged from white, yellow, and green, to rose. C. × Lindeni and C. × Luciani were among the most remarkable. A Diploma of Honour was awarded to the group and four others to special varieties.

In the establishment of M. Peeters, Brussels, we observed a very beautiful white variety of Cattleya labiata.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting held at the Drill Hall, James Street, Westminster, on October 24th, there was a very good display of Orchids, including some interesting species and hybrids.

J. Gurney Fowler, Esq., Glebelands, Woodford, Essex, exhibited a large and showy group, to which a Silver Flora Medal was awarded. It contained a number of well-grown and flowered forms of Cattleya labiata, a fine C. Schilleriana, C. bicolor, forms of C. Bowringiana, and Calanthe vestita.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), staged a fine group, which received a Silver Banksian Medal. The most remarkable plant was Oncidium ornithorhynchum album, with seventeen panicles, to which both a First-class Certificate and a Cultural Commendation was awarded. Pleurothallis lepanthiformis, Masdevallia attennata and M. Laucheana each received a Botanical Certificate. Other plants were Odontoglossum Insleayi splendens, a fine Lælia tenebrosa, some good Cattleya labiata, C. bicolor, Pleurothallis plumosa, with many spikes, and a number of Cypripediums. Among the latter were C. × Arthurianum, with nine flowers, C. × Mrs. Canham, with eleven, some pretty varieties of C. × Bellona, C. purpuratum, and C. insigne, Cambridge Lodge variety.

M. Jules Hye-Leysen, Coupure, Gand, sent several fine things, including Miltonia × Bleuana rosea, which received a First-class Certificate. It is a very handsome variety, with delicate blush-white flowers, the basal halves of the petals having some rose-purple colouring and the disc of the lip radiating purple lines. The other plants were Miltonia vexillaria Leopoldi and the handsome Cypripedium × Albertianum.

J. F. Alcock, Esq., Northchurch, Berkhampsted, sent Cattleya bicolor, Brassia Lanceana, Lycaste cruenta, Pleione Reichenbachiana, Selenipedium Schlimii, and Odontoglossum grande, with abnormal flowers.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howe), showed Odontoglossum × aspersum fulvidum, a handsome, buff-coloured form approaching O. × Humeanum.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), showed Cypripedium insigne Hardyanum, a beautiful clear yellow form.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), showed Cattleya elongata (Alexandræ) and Odontoglossum Wallisii.

S. G. Lutwyche, Esq., Eden Park, Beckenham, sent Miltonia Regnelli purpurea, and a hybrid Cypripedium, like a very light C. × Ashburtoniæ.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent Cattleya × Johnsoniana, C. × Dowiana splendens, Cypripedium Charlesworthii conchiferum, C. × Moensii, and C. × amabile.

R. Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), exhibited Cattleya labiata, Young's variety, and Cypripedium × Eyermanianum Hermione.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, showed three handsome hybrids, one of them being new. This was Lælio-cattleya × Chlonia, derived from Cattleya Warscewiczii ♀ and Lælio-cattleya × elegans Turneri ♂. It is comparable with Cattleya Eldorado, but the front lobe of the lip is broad, circular, and undulated, and the colour rich purple-crimson. The others were the handsome Cattleya × Wendlandiana and Lælio-cattleya × Pallas.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, received a Silver Banksian Medal for an effective group, including some good Cattleya labiata, C. Bowringiana, Vanda Sanderiana, Miltonia spectabilis Moreliana, Masdevallia tovarensis, Cypripediums, Dendrobiums, &c. A Botanical Certificate was given to Sophronitis cernua, of which several plants were included in the front of the group.

Messrs. Hugh Low and Co., Clapton, also received a Silver Banksian Medal for a fine group, including many Cattleya labiata and Miltonia Rœzlii, which were very effective. It also included the rare Paphinia rugosa and the singular Dendrobium Cœlogyne, the latter receiving a Botanical Certificate.

Messrs. F. Sander and Co., St. Albans, also staged a beautiful group, to which a Silver Banksian Medal was given. It contained a series of the charming Dendrobium Phalænopsis, of various shades of white, rose, and purple, the handsome Odontoglossum Wattianum superbum, which received an Award of Merit, forms of O. crispum, O. × mulus, Lælio-cattleya × exoniensis, Pescatorea Dayana, Cypripedium × Morganiæ burfordiense, Cattleya labiata, C. O'Brieniana, &c.

Messrs. B. S. Williams and Son, Upper Holloway, sent Dendrobium aqueum, D. superbiens, and D. Goldiei, also Lælia Perrinii nivea, and two plants of Cypripedium × Pitcherianum, Williams' var., one of them showing a curious reversal of the upper and lower sepals.

Mr. R. Hinds, gr. to M. Wells, Esq., Broomfield, Sale, sent a novel and very interesting exhibit, in the form of a series of dried flowers, pressed flat, and mounted in picture form. The colours were very well preserved and the effect very beautiful. The Committee awarded it a Silver Flora Medal.

At the meeting held on November 13th, there was a large and brilliant display, to which Cattleya labiata and Cypripedium insigne contributed very largely, though many other interesting plants were shown, as will be seen by the following report.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), sent a four-flowered inflorescence of the charming Cattleya labiata, R. I.

Measures' variety, and plants of Cypripedium insigne Ernesti, and the rare and pretty Cymbidium cyperifolium, each of them receiving an Award of Merit.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), showed a fine plant of the beautiful Cattleya labiata elegans, bearing four two-flowered racemes, an Award of Merit being deservedly given. He also sent flowers of other good forms of this species, a good C. Dowiana, Cypripedium × Ashworthiæ and Selenipedium × John Ashworth, a rosy form said to have been derived from S. reticulatum and S. × Sedeni candidulum.

The Rt. Hon. J. Chamberlain, M.P., Highbury, Moor Green, Birmingham (gr. Mr. Burberry), sent some very beautiful varieties of Dendrobium Phalænopsis. D. P. highburiense is a fine bright purple form, which received an Award of Merit; and D. P. Chamberlainianum a large white form, suffused with light purple, and a dark purple apex to the lip. A third form was white with lilac tips to the petals.

N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent a richly spotted Cypripedium called C. × Cyris (C. Boxallii ♀ × C. Argus ♂), to which an Award of Merit was given.

F. Wheatley, Esq., Ringmore, Teignmouth, sent the handsome Oncidium × Wheatleyanum, which received an Award of Merit.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent some fine forms of Cattleya labiata, C. Dowiana aurea, C. D. magnifica, C. Bowringiana, C. × Johnsoniana, Dendrobium Phalænopsis, Cypripedium × Edwardii, C. × Ariadne, and C. × Roberti (C. hirsutissimum ♀ × C. insigne Wallacei ♂), which is really a variety of C. × Alcides. The group received a Vote of Thanks.

H. Grinling, Esq., Harrow Weald House, Stanmore (gr. Mr. Rapley), showed a fine plant of a Saccolabium, apparently S. calceolare, to which a Botanical Certificate was awarded.

J. F. Alcock, Esq., Northchurch, Berkhamsted, sent a good form of Odontoglossum × Wilckeanum.

Sir Archibald Buchan-Hepburn, Prestonkirk, East Lothian, sent Lælia × Crawshayana leucoptera.

Admiral Cator, Hazelwood, King's Langley (gr. Mr. Day), exhibited Catasetum Bungerothii with a single female flower, and Cypripedium Victoria-Mariæ.

Earl Cowper, Panshanger, Herts (gr. Mr. Fitt), showed Lælio-cattleya × Mauve Queen (Cattleya Warneri ♀ × Lælia crispa ♂), like a small rosy L.-c. × exoniensis, a splendid Calanthe × Florence with a tall spike of thirty deep rose-purple flowers, and some forms of Cypripedium insigne. A Vote of Thanks was given.

W. I. Empson, Esq., Ampthill House, Ampthill, showed a good Cattleya labiata.

R. G. Fletcher, Esq., Withdean, Brighton, exhibited Lycaste macrobulbon var. Youngianum.

W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke (gr. Mr. Carr), sent Odontoglossum crispum, Fair Oak var., a handsomely spotted form.

M. Jules Hye-Leysen, Coupure, Gand, showed Lælio-cattleya × Gottoiana Hyeana.

J. W. Temple, Esq., Leyswood, Groombridge, Tunbridge Wells (gr. Mr. Bristow), showed a pretty hybrid Cattleya × Miss Williams (C. Harrisoniana ♀ × C. Gaskelliana ♂), having the size and colour of the former with a lip much like the latter.

W. J. Thompson, Esq., Walton Grange, Stone, Staff. (gr. Mr. Stevens), sent two fine forms of Cattleya labiata, and a pretty light C. Gaskelliana.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent Lælio-cattleya × elegans Cawenberghei, L.-c. × e. Turneri, Cattleya superba, and Cypripedium × Clarence (C. Spicerianum × unknown).

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, received an Award of Merit for Cattleya × Fabia, a beautiful hybrid derived from C. labiata ♀ and C. Dowiana ♂, which had light rosy pink mottled segments, and a lip approaching the former, but with more yellow in the throat and some light veining on the disc. The handsome Lælio-cattleya × Statteriana and Cypripedium × Tityus were also sent.

Messrs. Collins and Collins, Cumberland Park Nurseries, Willesden, staged an effective group, to which a Silver Banksian Medal was given. It included many plants of Cypripedium insigne, Oncidium varicosum, and Cattleya labiata; also some good C. maxima and Cypripedium callosum.

Messrs. W. L. Lewis and Co., Southgate, also received a Silver Banksian Medal for a fine group, including Cattleya labiata, Bowringiana (one having five good spikes), Walkeriana, and Warscewiczii delicata, Masdevallia tovarensis, some good Oncidium tigrinum, O. ornithorhynchum, and several Cypripediums, including C. × Robertsianum (C. insigne Wallacei ♀ × callosum ♂), a variety of C. × Leonæ.

Messrs. Linden, L'Horticulture Internationale, Brussels, exhibited a most interesting group of Catasetums, including four varieties of C. Bungerothii, two of C. macrocarpum, and several intermediate forms. C. Bungerothii aurantiacum, C. Lindeni, and C. O'Brienianum each received an Award of Merit, and C. macrocarpum chrysanthum a Botanical Certificate. Other forms were C. Luciani, C. splendens, C. s. regale and C. s. viride. The group was awarded a Silver Banksian Medal.

The group staged by Messrs. Hugh Low and Co., Clapton, was large and showy, and received a Silver Banksian Medal. It contained a fine bank of Cattleya labiata, three yards long; a variety called lilacina having lilac segments and the front of the lip of a peculiar dull blue-purple shade; C. superba, C. Bowringiana, Vanda cœrulea, V. Sanderiana, the singular Mormodes tigrinum, Cœlogyne barbata, and various Cypripediums.

Messrs. F. Sander and Co., St. Albans, staged a group of very interesting things, including the remarkable generic cross Epilælia × Hardyana (Epidendrum ciliare ♀ × Lælia anceps ♂), which received an Award of Merit, some good Dendrobium Phalænopsis, the singular D. platycaulon, to which a Botanical Certificate was given, Phaio-calanthe × Arnoldiæ, Lælia tenebrosa, L. præstens Lueddemanniana, Calanthe × Sandhurstiana, C. × Victoria-Regina, the rare Stenia pallida, Catasetum Christyanum, Zygopetalum rostratum, and last, but not least, the three beautiful Pescatoreas, Lehmanni, Klabochorum, and Dayana.

Messrs. Vervaet and Co., Mont-St.-Amand, Gand, exhibited Odontoglossum crispum Franz Masereel, a magnificent form, in which the segments were regularly covered with large intense purple spots, to which a First-class Certificate was deservedly awarded.

Messrs. B. S. Williams and Son, Upper Holloway, exhibited Phaio-calanthe × Sedeniana rosea.

Mr. G. Young, St. Albans, showed Cypripedium insigne Youngianum and C. i. superbum, two pretty yellow forms.

CORRESPONDENCE, &c.

E. A., Wilmslow. Cymbidium giganteum.

G. M., Olivet. Photographs received, with thanks.

J. B., Bielside. Lælia × Crawshayana var.

G. R., Arddarroch. Odontoglossum facetum is probably correctly named, but there seems to be no character by which it can be distinguished from O. luteopurpureum var. sceptrum.

O. O. W., Bury. Cypripedium insigne sixteen varieties. Many thanks; next month.

TO OUR READERS.

The present number completes our second volume, and we again take the opportunity of thanking our numerous friends and subscribers for their support, which we hope will be continued in increased amount during the coming year. Many readers have written expressing their satisfaction with the way the work has been conducted, and in some cases suggesting improvements, both of which we appreciate, as we welcome any means of increasing its usefulness. The success of a work of this kind depends largely upon the amount of support received, and our readers would materially help us in introducing improvements, especially in the number of illustrations, by obtaining additional subscribers; and we would urge them to accelerate its progress by making it more widely known among their Orchid-growing friends, and by communicating interesting facts and specimens suitable for our pages. No effort on our part will be wanting to make the work a complete and impartial record of events in the Orchid world, and a trustworthy guide to the culture of these charming plants.

INDEX.

ABNORMAL temperatures, 363
Acampe multiflora, 135
Acanthephippium bicolor, 12
Adactylus, 71 ; latifolius, 71 ; Lobbii, 71 ; nudus, 71
Aëranthes grandiflorus, 135
Aërides Hughii, 158 ; maculosum Schrœderi, 222 ; odoratum, 76 ; paniculatum, 133
Aganisias, culture of, 216
Angræcum falcatum, 134 ; Fournierianum, 236, 254
Anguloa Clowesii, 223 ; Ruckeri, 284
Anguloas, culture of, 120
Ants, 251
Antwerp Horticultural Exhibition, 66, 130, 183
Apostasia, 71
Arachnanthe Cathcartii, 126 ; moschifera, 288
Arethusa bulbosa, 45, 46
Arpophyllum giganteum, 127, 128
Ashton, F. W., 321

BALLIF, Cypripedium list, 193
Banks, Sir J., Basket culture, 133
Bartholina pectinata, 46
Bees and Orchids, 295, 338
Beetle eating Orchids, 354
Bifrenaria Charlesworthii, 199 ; Harrisoniæ, 136 ; H. Buchaniana, 162 ; H. pubigera, 162 ; H. purpurascens, 162 ; inodora, 186 ; racemosa, 126 ; tyrianthina, 224
Bletia catenulata, 288, 298 ; florida, 46 ; hyacinthina, 76, 78 ; verecunda, 44, 45, 77 ; Watsoni, 298
Bolleas, cultural notes, 14, 248, 277, 340
Bonatea speciosa, 133
Books on Orchids, 230
Borneo, Botanical Exploration in, 97
Boyle, F., *About Orchids*, 108
Brassavola cucullata, 47, 77
Brassia antherotes, 31 ; maculata, 76
Brasso-cattleya × Lindleyana, 285
Broughtonia sanguinea, 47
Bulbophyllum auricomum, 39 ; barbigerum, 222 ; Careyanum, 136 ; Hookerianum, 236 ; Leysianum, 294 ; saurocephalum, 159
Bull's Annual Exhibition, 213
Burberry, H. A., *Amateur Orchid Grower's Guide Book*, 1, 109

CALADENIA alba, 76
Calanthe × Baron Schröder, 95 ; × Bryan, 62 ; × Florence, 62 ; × Laucheana, 288 ; × Mylesii, 30 ; rosea, 331 ; striata, 127 ; × Veitchii as a wild plant, 19 ; veratrifolia, 135 ; vestita, 332 ; × Victoria-Regina, 29 ; × William Murray, 62
Calanthes, culture of, 119
Calendar of Operations, 23, 55, 86, 118, 148 185, 215, 247, 279, 312, 344, 366
Calopogon pulchellus, 45, 46, 47
Calypso americana, 76
Camaridium Lawrenceanum, 199
Cambridge Lodge Collection, 102
Cattley's collection, 135
Catasetum Bungerothii female flower, 374 ; B. aurantiacum, 375 ; Christyanum, 285 ; Darwinianum, 30 ; Finetianum, 75 ; Gnomus, 30 ; Hookeri, 134, 135 ; Lindeni, 356, 371, 375 ; Luciani, 356, 371, 375 ; macrocarpum chrysanthum, 375 ; m. Lindeni, 294. 356 ; O'Brienianum, 356, 375 ; punctatum, 360 ; Rodigasianum tenebrosum, 186 ; × splendens, 355, 356
Catasetums, culture of, 88
Cattleya disease, 369 : fly, 57, 96, 250 ; nomenclature, 266
Cattleya Alexandræ, 206 ; alutacea, 206 ; Aquinii, 207 ; × Arthuriana, 143 ; × Ashtoniana, 288 ; × Atalanta, 275, 287, 303 ; bicolor cœrulea, 349 ; Bowringiana, double, 354 ; × Browniæ, 334, 351 ; Brownii, 170 ; × Brymeriana, 302 ; chocœnsis at home, 307 ; citrina aurantiaca, 194 ; Dowiana at home, 295 ; Dowiana aurea, 289, 322 ; sale of, 259 ; Eldorado, 301 ; elongata, 206, 302 ; eximia, 206 ; Forbesii, 135 ; fragrans, 206 ; Gaskelliana, 370 ; Gaskelliana alba, 296 ; G. albens, 319 ; G. Nellie, 256 ; gigas, 299 ; culture of, 217 ; granulosa superba, 284 ; × Hardy-

ana, 262 ; × Hardyana Countess of Derby, 294, 336 ; × H. laversinensis, 284 ; × H. marmorata, 350 ; × H. Selwood var., 317 ; Harrisoniæ, 335 ; Harrisoniana, 335 ; Harrisonii, 336 ; imperialis, 299 ; intermedia variegata, 336 ; × Kienastiana, 318 ; labiata, 29, 134 ; malformed, 2 ; peloriate, 358 ; varieties, 357 ; l. Countess Fitzwilliam, 350 ; l. delicata, 358 ; l. elegans, 193, 257, 374 ; l. Foleyana, 350 ; l. Hardyana, 357 ; l. lilacina, 375 ; l. Peetersii, 78 ; l. R. I. Measures' var., 358, 373 ; l. Sanderæ, 358 ; l. Youngiana, 358 ; Lawrenceana, 186 ; lobata, 364 ; Loddigesii, 127, 134, 135 ; × Mantinii, 365 ; × Marstersoniæ, 353 ; Mendelii, abnormal, 251 ; M. H. A. Tracey, 286 ; M. Lewisii, 191 ; M. Mrs. Crawshay, 191 ; M. picta, 189 ; × Minucia, 291, 319 ; × Miss Williams, 375 ; Mossiæ alba, 223 ; M. imperialis, 189 ; M. Peetersii, 199 ; M. R. H. Measures, 224 ; × Mrs. M. Wells, 288 ; Papeinsiana, 336 ; × Prince of Wales, 286 ; princeps, 206 ; purpurina, 206 ; Rex, 175, 226, 265, 272 ; Sanderiana, 299 ; Trianæ, 126, 289, 297 ; T. varieties, 128 ; trichopiliochila, 206, 301 ; trilabiata, 206 ; × triophthalma, 40 ; × venosa, 132 ; × Victoria-Regina, 7, 30, 293, 327, 353 ; Wallisii, 301 ; Warneri, culture of, 217 ; Warscewiczii, 299 ; W. Countess of Derby, 294, 319 ; W. Leopold II., 371 ; × Wendlandiana, 144, 351

Cattleyas at Stand Hall, 291 ; Rodrigues' Brazilian, 206

Census Orchidearum, 98

Ceylon Orchids, 12

Charlesworth Shuttleworth and Co.'s Orchids, 212

Chondrorhyncha Chestertoni, 317

Chysis bractescens, 156 ; Bruennowiana, 72

Cirrhæa viridi-purpurea, 135

Cirrhopetalum Collettii, 159

Cleisostoma Wendlandorum, 124

Cochlioda Noetzliana, 268

Cœlia Baueriana, 47

Cœlogyne corrugata, 12 ; cristata, culture of, 89 ; c. varieties, 68 ; c. Woodlands variety, 107 ; Dayana, 188 ; fimbriata, 136 ; glandulosa, 13 ; Mayeriana, 320 ; Mossiæ, 127, 169 ; ocellata maxima, 157 ; odoratissima, 12, 253 ; Sanderiana, 253 ; Swaniana, 160, 198

Continental Notes, 28, 60, 91, 124, 220, 252, 371

Corning, Hon. E.'s Orchids, 227

Correspondence, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320 352, 376

Correvon, on hardy terrestrial Orchids, 131

Coryanthes, Fertilisation of, 338

Coryanthes macrantha, 340 ; speciosa at Highbury, 204 ; Wolfii, 186

Costa Rica Orchids, 295

Crosses, abortive, 167, 168

Crueger, Fertilisation of Orchids, 340

Cryptarrhena lunata, 133

Cryptoptoranthus Dayanus, 286

Culture, Early methods of, 45, 47, 77, 78, 133, 136 ; Belgian and English, 99

Cycnoches, 268 ; Loddigesii, 65, 194, 354 ; L. female flower, 277 ; pentadactylon, 146, 257 ; peruvianum, 285

Cymbidium cyperifolium, 374 ; ensifolium, 46, 77 ; lancifolium, 135 ; pendulum, 46, 48 ; sinense, 47, 77 ; Tracyanum, 31

Cymbidiums, culture of, 151

"Cypripedilum," 269

Cypripedium crossed with Selenipedium, 66, 167, 171, 258 ; floral structure, 71 ; List of species, varieties, and hybrids, 193 ; Nomenclature of, 269, 303 ; seedlings, 117 ; sports, 20, 147 ; Williams' Memorial Medal, 65, 187 ; acaule, 45, 46, 48 ; album, 48 ; × Allanianum, 22 ; × Annie Measures, 159, 178 ; × Anton Joly, 144 ; arietinum, 76, 78 ; × Arnoldiæ, 349 ; × Arthurianum pulchellum, 44 ; × Astrea, 349 ; × aureum, 92 ; × Batalinii, 349 ; × Beechense, 223 ; × Behrensianum, 111 ; bellatulum and C. Charlesworthii in same clump, 213 ; b. two-flowered, 247, 258 ; × bellinum, 42 ; × Bookeri, 352 ; × Buchanianum, 303 ; Bullenianum Appletonianum, 96 ; × Burtonii, 144 ; Calceolus, 369 ; × calloso-Argus, 110 ; callosum Rossianum, 64 ; c. Sanderæ, 189, 197 ; c. sublæve, 54 ; × Captain Lendy, 93 ; caudatum, 295 ; Chamberlainianum, 35, 262 ; × Charles Richman, 303, 319 ; Charlesworthii, 69, 212, 213, 230, 258, 264, 286, 287, 290, 321, 351, 353 ; ciliolare, 307 ; × Clarence, 375 ; Cobbianum, 29 ; × conco-Lawre (Fig. 33), 337 ; × Crossianum Castle Hill var., 42 ; Curtisii, 307 ; × Cyris, 374 ; × Dauthieri, the Albino, 147 ; × Dauthieri varieties, 20 ; × Denisianum, 276 ; ×

Echo, 111 ; × Edwardii, 266 ; × Engelhardtæ, 29 ; × Eurydice, 61 ; × excellens, 275, 303, 319 ; × Excelsior, 92, 275, 286, 303 ; × Eyermanianum Hermione, 22 ; Fairieanum, 289 ; × Fairieano-Lawrenceanum, 29 ; × Fascinator, 28, 30 ; × Fraseri, 94 ; × Georgianum, 164 ; × Gibezianum, 297 ; × gloriosum, 350 ; Godefroyæ crossed with niveum, polymorphism in progeny, 227 ; G. Cambridge Lodge var., 287 ; G. leucochilum (Fig. 16), 145 ; × Godseffianum, 95 ; × Goultenianum, 62 ; × Gravesiæ, 81 ; × Harrisianum virescens, 235 ; × Hobsoni, 285 ; × Horneri, 80 ; × Hurrellianum, 324 ; × Indra, 319 ; insigne, 134 ; i. Bohnhofianum, 40, 98 ; i. Ernesti, 374 ; i. Hardyanum, 372 ; i. illustre, 29 ; i. Sânderæ (Fig. 5), 41, 98 ; i. superbum, 376 ; i. youngianum, 376 ; × Inspirator, 82 ; × Io grande (Fig. 6), 49 ; × Io-Spicerianum, 143 ; × Iris, 92 ; × James H. Veitch, 309, 318 ; × Janet Ross, 311 ; × J. Gurney Fowler, 156 (Fig. 34), 361 ; × Josephianum, 324 ; × Jupiter, 60 ; × Kaloe, 94 ; × Lauræ, 80 ; Lawrenceanum atrorubens, 128 ; × Leeanum, 362 ; × leucochilum aureum, 287 ; × Leysenianum, 253 ; × Lobengula, 126 ; × Lucianianum, two-flowered, 155 ; × Mabelianum, 287 ; × Madame Jules Hye, 92, 144 ; × Mary Lee, 29 ; Mastersianum (Fig. 4), 17, 158, 160 ; × memoria-Moensii, 335, 350 ; × Merops, 159 ; × Metèor, 303 ; × Millmanii, 285 ; × miniatum, 92 ; × Minos, 30 ; × modestum, 286 ; × Moensii, 335 ; × Morganiæ langleyense, 63, 79 ; × Mrs. Tautz, 44 ; × mulus, 112 ; × Nandii, 310 ; × Niobe luteum, 172 ; × N. magnificum, 80 ; × N. oliganthum, 172 ; × N. purpureum, 172 ; × N. Short Hills var., 80 ; O'Brienianum, 96 ; × œnanthum punctatum, 334 ; × Œnone, 32 ; × Pandora, 111 ; parviflorum, 45 ; × Patersonii, 255 ; × Pelias, 144 ; × Pluto, 29 ; Poyntzianum, 54 ; præstans, 224 ; × Priorianum, 29 ; × Psyche, 262 ; pubescens, 45, 77 ; p. poisonous, 141 ; × Rex, 124, 126 ; × Roberti, 93 ; × Robertsianum, 375 ; × Robinianum, 79 ; Rothschildianum, 95 ; × Sallieri aureum, 30 ; Sanderianum, 204 ; siamense, 54, 288 ; × Smithii, 31 ; spectabile, 45, 66 ; s. poisonous, 141 ; superbiens, 307 ; × tenebrosum, 95 ; × tessellatum porphyreum, 287 ; × The Hendre, 285 ; × The Pard, 317 ; × Tryanowskyanum, 43 ; × turpe, 43 ; venustum Measuresianum, 11, 31 ; Victoria-Mariæ, 374 ; × Warnhamense, 31 ; × Wiganianum, 32, 143 ; × Winifred Hollington, 157 ; × W. R. Lee, 287, 309

Cypripediums at Camberwell, 103, 106 ; at Orange, N. J., 164 ; at Stand Hall, 292 ; New Chinese species, 290

Cyrtopera flexuosa, 359 ; papillosa, 53 ; Woodfordii, 133

Cyrtopodium Andersoni, 77 ; Andersonianum, 159 ; Godseffianum, 159 ; virescens, 148

DENDROBIUM beetle, 57

Dendrobium × Ainsworthii, 290 ; album, 13 ; × Alcippe, 159, 173 ; aqueum, 13, 136, 318 ; × Armstrongi, 93 ; atroviolaceum, 33, 64, 72 ; Augustæ-Victoriæ, 107 ; Bensoniæ, culture of, 176 ; capillipes, 157 ; cariniferum, 235 ; × cheltenhamense, 155 ; ciliatum, 284 ; Cœlogyne, 373 ; × Cooksoni, 33 ; × Cordelia, 172 ; crassinode (Fig. 17), 177 ; × crassinodi-Wardianum (Fig. 19), 177 ; crepidatum, 158 ; cretaceum, 185 ; cruentum, 234, 349 ; cuspidatum, 331 ; × Cybele, 128 ; × dellense, 186 ; × Dido, 61 ; × Doris, 142 ; Draconis, 234 ; eburneum, 234 ; × Edithæ, 126 ; × Euryalus, 142, 156 ; euosmum and varieties, 112 ; Falconeri for the greenhouse, 88 ; fimbriatum, 135 ; f. oculatum, 19 ; Findlayanum, 155 ; formosum at home, 137 ; f. Berkeleyi, 138 ; f. giganteum, 288 ; glomeratum, 32, 169, 211 ; Griffithianum Guiberti, 224 ; hamatum, 198 ; × Hebe, 61 ; hedyosmum, 234 ; Hildebrandii, 158, 198 ; Imperatrix, 127 ; infundibulum, 235 ; Jamesianum, 235 ; Johannis, 158 ; Kingianum album, 125 ; lineale, 207 ; linguiforme, 76 ; longicornu, 235 ; luteolum, 332 ; × Lutwycheanum, 202 ; macrostachyum, 13 ; Mettekeanum, 294 ; M'Gregorii, 294 ; × Nestor (Fig. 28), 273 ; nobile (Fig. 11), 113, 114, 366, 367 ; and varieties, 69 ; specimen plant, 219 ; n. albiflorum (Fig. 12), 113, 115 ; n. Ballianum, 115 ; n. Cooksonianum (Fig. 15), 113, 115 ; n. nobilius (Fig. 13), 113, 115 ; n. Sanderianum (Fig. 14), 113, 115 ; n. Schroederianum, 186 ; n. Smee's var., 160 ; O'Brienianum striatum, 286 ; Palpæbræ, 352, 333 ; Phalænopsis, 32, 160 ; P.

at Cheltenham, 300; P. album, 350; P. highburiensis, 374; Pierardi, 135; platycaulon, 376; purpureum, white, 93; revolutum, 138; × Rolfeæ (Fig. 9), 113, 156, 157; R. × roseum (Fig. 10), 113, 114; Sanderianum, 169; scabrilingne, 234; × Sibyl, 126; speciosum, 76, 93; × splendidissimum Leeanum, 126; Statterianum, 254; subclausum, 359; superbum Huttoni, 155; tetragonum, 127; transparens album, 165; × Venus, 155; veratrifolium, 207, 253; × Virginia, 127, 171; Wardianum (Fig. 18), 177; W. giganteum, 127
Dendrobiums, A group of, 113; culture of, 87
Disa cornuta, 76; × Diores, 239; grandiflora, 135; × kewensis, 203; × langleyensis, 186, 202, 203, 211; × Premier, 203; spathulata, 76; × Veitchii, 203
Disas, Hybrid at Kew, 203
Dies Orchidianæ, 35, 67, 99, 131, 205, 230, 265, 297, 327
Diuris aurea, 76
Durand, *Census Orchidearum*, 98

ELLEANTHUS capitatus, 47
Epicattleya × guatemalensis, 196
Epidendrum alatum, 224; atropurpureum, 157; Brassavolæ, 287; ciliare, 47, 48; cochleatum, 45, 46, 75, 77; conopseum, 46; Ellisii, 157, 198; elongatum, 47, 77; fragrans, 45, 46, 47; fuscatum, 47, 77, 133; Godseffianum, 323; Hartii, 170; nocturnum, 135; nutans, 47, 78, 133; organense, 222; Pseudepidendrum at home, 296; radiatum, 287; radicans, 160; umbellatum, 47, 133; violaceum, 134; vitellinum, culture of, 122; Wendlandianum, 312
Epilælia × Hardyana, 364, 376
Eria aëridostachya, 155; cinnabarina, 198; flava, 136; floribunda, 128, 157; stellata, 136
Euglossa aurata, 338
Eulophia gracilis, 135; guineensis, 135; maculata, 134
Eulophiella Elizabethæ, 97, 130, 157; romance of, 101, 231
Evans, Mr. T.'s collection, 77

FERTILISATION of Cattleya Mossiæ, 167; of Orchids in Tropics, 295, 338; process of, 167
Floral structure, 50, 70
Flowers, dried, 373
Fossil Orchids, 268
Franchet on New Chinese Cypripediums, 290

GALEANDRA Devoniana, 95; lagoensis, 285, 360
Generic crosses, 166
Geodorum citrinum, 76, 77; dilatatum, 76; purpureum, 76
Glossodia major, 76
Gomeza recurva, 135
Gongora Charlesworthii, 233; portentosa, 272; Scaphephorus, 233
Goodyera discolor, 133; pubescens, 76, 133
Gower, W. H., death of, 258
Grammatophyllum, Guilelmi II., 107; speciosum, 86
Graves, H., collection, 163
Greenhouse Orchids, 230, 361

HABENARIA bracteata, 76; carnea, 290, 321, 368; c. nivosa, 286, 290, 321; chlorantha, 369; ciliaris, 30, 47, 75; cristata, 76; fimbriata, 45, 46; herbiola, 46; hyperborea, 76; lacera, 133; militaris, 321, 368; Susannæ, 318, 331
Hæmaria discolor, 133
Hardy, G., death of, 130; sale of collection, 129, 161, 225, 342
Hardy terrestrial Orchids, 131
Hibbert, Mr. G.'s collection, 77
Highbury, Orchids at, 204
Hodgkinson's, Dr., collection, 195
Horsman, F., Death of, 194
Horticultural Society's collection, 136
Houlletia Lansbergii, 224
Hybrid Cypripediums, Nomenclature f, 303; H. Odontoglossums, 139, 200, 328
Hybridising, 51
Hybrids, age of flowering, 116; at Albany, 227; at Camberwell, 105; at Heaton, 213; at Selly Hill, 261; at Stand Hall, 292; at Wilmslow Grange, 197
Hygrometer, 317

IMPORTED Orchids, Treatment of, 368
Insecticide, 251, 315
Ionopsis utricularioides, 135
Ipsea speciosa, 12
Isochilus linearis, 47
Isosoma Orchidearum, 250

JOURNAL DES ORCHIDÉES, 2

KENT, Adolphus H., 34, 194
Kerchove, Count, *Le Livre des Orchidées*, 2, 267
Kew collection in 1789, 45

LÆLIA × amœna, 334, 351 ; anceps, 33, 36 ; a. Amesiana, 29 ; a. Ashworthiana, 63 ; a. Hollidayana, 74 ; a. Sanderiana (Fig. 3), 9, 11 ; a. Walton Grange var., 63 ; Boothiana, 157, 363 ; cinnabarina, 159 ; Crashleyana, 316, 348 ; × Crawshayana, 64 ; crispa, 288, 363 ; ×elegans leucotata, 237 ; Eyermaniana, 15 ; × Finckeniana (Fig. 1), 9, 30 ; furfuracea, abnormal, 64 ; f. Ashworthiæ, 16 ; Gouldiana (Fig. 2), 9, 10 ; × Lindleyana, 285 ; Lucasiana, 348 ; majalis, 195 ; pumila delicata, 319 ; purpurata Hardyana, 189 ; superbiens, 127 ; tenebrosa, 253 ; t. Hamar Bass' var., 238 ; t. Pittiana, 253 ; t. Walton Grange var., 240 ; × triophthalma, 40
Lælio-cattleya × albanense, 2 ; × Aylingii, 189 ; × Canhamiana alba, 254 ; × Chlonia, 373 ; × Cornelia, 30 ; × Digby-ano-Mossiæ, 130 ; × Doris, 79, 111 ; × elegans at Streatham, 271 ; × e. Dulcotensis, 287 ; × e. nobilius, 318 ; × e. Turneri, 222 ; × Eumæa, 21 ; × Frederick Boyle, 189, 239 ; ×Gottoiana Hyeana, 371, 375 ; × Hon. Mrs. Astor, 94, 111 ; × Ingramii, 276 ; × I. broomfieldensis, 287 ; × leucoglossa bella, 43 ; × Mauve Queen, 374 ; × Nysa, 31 ; × N. picta, 349 ; × N. purpurea, 349 ; × N. superba, 349 ; × Oweniæ, 317 ; × Pallas, 21 ; × Parysatis, 310 ; ×Pittiana, 107 ; × Schilleriana leucotata, 237 ; × Statteriana, 21 ; × Timora, 255 ; × triophthalma, 40 ; × Tydea, 95 ; × Valvassorii, 221 ; × Wellsiæ, 349 ; × Wellsiana, 224 ; × Zephyra, 285
Lath roller blinds, 212
Leaf structure, 101
Lehmann's Orchid Herbarium, 2
Leptotes bicolor, 157
Limodorum falcatum 134
Linden, A., Death of, 258 ; L., *L'Orchidées Exotiques*, 232 ; MM. J. and L., presentation to, 97
Liparis liliifolia, 45, 46, 75
Lissochilus Graefei, 312 ; speciosus, 134
Loddiges' collection, 77
Lobb, T., Death of, 162
Low, Hugh, and Co.'s, Orchids, 82
Lutwyche, Orchid sale, 257
Lycaste Barringtoniæ, 47 ; cruenta, 159 ; × Imschootiana, 8, 28, 30 ; Luciani, 30, 75 ; Lucianiana, 28 ; mesochlœna two-flowered, 96 ; × schoenbrunnensis, 285 ; Skinneri alba, 64, 74, 95, 107 ; armeniaca (Fig. 7), 73 ; Mrs. H. Ballantine, 127

MACRADENIA lutescens, 135
Manchester Show, 129, 180
Manure, 152
Masdevallia Pit at Kew, 65
Masdevallia Arminii, 157 ; × Asmodia, 202, 224 ; attennata, 372 ; calura, 223 ; × Cassiope, 253 ; cucullata, 253 ; × Doris, 22 ; gargantua, 125 ; × glaphyantha, 224 ; Harryana Gravesiæ, 165 ; × Henrietta, 203 ; × Jessie Winn, 365 ; × Kimballiana, 253 ; Laucheana, 372 ; muscosa, 214 ; × Parlatoreana, 224 ; picturata, 93 ; pusilla, 53 ; racemosa, 154, 246 ; rosea, 253 ; simula, 158 ; torta, 158 ; tovarensis crossed with M. bella, 262
Masdevallias at Camberwell, 103, 105 ; at home, 155 ; at Selly Hill, 263 ; culture of, 153, 175 ; hybridisation of, 18
Maxillaria Lawrenceana, 155 ; Lindeniæ, 75 ; mirabilis, 75
Megaclinium nummularia, 236 ; pusillum, 359 ; triste, 359
Microstylis Scottii, 186
Mildew, 344
Miltonia × Bleuana nobilior (Frontispiece), 355 ; × B. rosea, 372 ; × Bluntii Peetersiana, 13 ; × festiva, 192 ; Roezlii, culture of, 89 ; spectabilis atrorubens, 350 ; stellata, 160 ; vexillaria, 223 ; culture of, 89 ; v. Daisy Haywood, 240, 253
Minnesota, State flower, 142
Monstrosities in Orchids, 258
Mormodes aromaticum, 285 ; Rolfeanum, 33, 61
Moulmein Orchids, 136, 234, 321

NAMES, unauthorised, 298
Nanodes Medusæ, 253
Neilgherry Orchids, 12
Neuwiedia, floral structure, 71 ; Griffithii, 276 ; Lindleyi, 70
Nigritella augustifolia 46
Nomenclature, 99, 231, 265, 267, 269, 297

OCTOMERIA graminifolia, 47
Odontoglossum × Andersonianum, 157, 158 ; × A. Hazelbourne var. (Fig. 30) 305 ; × A. superbum (Fig. 31), 305, 306 ;

× A. Young's var., 192, 306 ; × aspersum fulvidum, 372 ; × A. roseum, 319 ; × brachypterum, 140 ; × Brandtii, 200, 201 ; chiriquense at home, 296 ; citrosmum sulphureum, 286 ; c. Rosefield var., 222 ; × Cookeanum, 330; × Coradinei mirabile, 198, 298 ; crispum, 192 ; at Temple Show, 205, culture of, 218, fine, 253, well flowered, 239 ; c. apiatum, 97, 125, 205, 244, 298 ; c. apiculatum, 186 ; c. aureum, 223 ; c. Baroness Schröder, 210, 222 ; c. Bonnyanum, 189; c. Capartianum, 191 (Fig. 26), 241, 242 ; c. excelsior, 187, 242 ; c. Florrie, 159, 169 ; c. Franz Masereel, 376 ; c. grande-maculatum, 211, 222 ; c. Lowianum, 160 ; c. Massangeanum, 189 ; c. mirabile, 198, 222, 298; c. Miss Florence Bovill, 222; c. Rex, 187 (Fig. 25), 241, 242 ; c. Thompsoniæ, 31, 34 ; c. Thompsoni, 244 ; c. Trianæ, 192 ; c. variegatum, 244 ; c. xanthotes, 187 (Fig. 29), 305 ; c. Wolstenholmiæ, 187 (Fig. 24), 241, 242 ; × dellense, 201 ; × deltoglossum, 32 ; × d. Stevensii, 115 ; × dicranophorum, 328 ; × elegans Sander's var., 156 ; × elegantius, 141 ; × eugenes, 201 ; × excellens, 200, 201 ; × e. chrysomelanum, 125 ; × e. Harvengtense, 112 ; Galeottianum, 254 ; gloriosum, double, 238 ; × Godseffianum, 328 ; grande, twin, 32 ; Harryanum, 300 ; × Harvengtense, 201 ; Hennisii, 351 ; × Horsmanii, 139, 140, (Fig. 32) 306 ; × Impératice de Russie, 75, 92 ; × Imschootianum, 329 ; Krameri at home, 296 ; K. album, 34 ; × ligulare, 352 ; × Lindleyano-nobile, 140 ; × Lindleyano-tripudians, 329 ; × Lindleyano-triumphans, 328 ; × luteopureo-nobile, 139 ; luteopurpureum sceptrum, 156 ; l. s. leopardinum, 253 ; × lyroglossum, 140 ; × majesticum, 140 ; × Murrellianum, 329 ; nævium, 244 ; nobile, 139 ; × nobili-triumphans, 200 ; Rossii immaculatum, 132 ; sceptrum album, 140 ; × Staurastrum, 329 ; × stauroides, 141 ; × stellimicans, 200, 201 ; triumphans Lionel Crawshay, 186 ; Vuylstekeanum, 191 ; V. muculatum, 201 ; Wattianum superbum, 373 ; × Wilckeanum excelsior (Fig. 27), 241, 242 ; grande, 223

Odontoglossum at Walton Grange, 243 ; from Ocana, 139; Group of, 241, 305 ; Hybrid, 139, 200, 328

Oncidium altissimum, 47 ; ampliatum, specimen, 190 ; a. majus, 278 ; barbatum, 134 ; bifolium, 77 ; brevilabrum, 170 ; carthaginese, 47, 77 ; flexuosum, 134 ; incurvum, 362 ; Jonesianum, 150, 286 ; Kramerianum, 295 ; Lucasianum, 158, 199 ; luridum, 135 ; Marshallianum, 191 ; ornithorhynchum album, 372, fine specimen, 322 ; Papilio, 135 ; pumilum, 136 ; refractum, 229 ; Sanderianum, 54 ; sessile, 160 ; tigrinum, 352, 354 ; triquetrum, 47 ; × Wheatleyanum, 374

Orchid Album, 34

Orchidéene, fiftieth meeting, 97

Orchid, basket, a primitive, 133, books, 230 ; Cultivation, History of, 44, 75, 133 ; Exchange, P. Weathers, 225 ; Hybridisation, 18, 50, 83, 116, 166 ; portraits, *see* Portraits ; sale, 259 ; seeds, 83

Orchids, ancestral, 70 ; cool, 341 ; how to popularise, 327, 341 ; in Jungle, 12, 136, 234, 331 ; in *Scribner's Magazine*, 66 ; of 1893, 3

Orchis globosa, 47, 75 ; mascula, 131 ; papilionacea, 46 ; spectabilis, 76

Ornithidium coccineum, 46, 77 ; fragrans, 170

Ornithocephalus gladiatus, 136 ; grandiflorus, 256

Otiorhynchus sulcatus, 354

PAPHIOPEDILUM, 268, 269, 270 ; cothurnum, 270 ; epidendricum, 270 ; Socco, 270

Paphiopedium, 268

Penzig, on Monstrosities, 258

Peruvian Orchids, 36

Pescatorea Klabochorum excellens, 254 ; Lehmanni, 14

Pescatoreas, culture of, 14, 248, 277, 340

Phaio-calanthe × Arnoldiæ, 63 ; × Sedeniana rosea, 32

Phaius bicolor Oweniæ, 208 ; Blumei, 127 ; grandifolius, 45, 46, 66, 77 ; × Marthæ, 127 ; Oweniæ, 160 ; × Owenianus, 18 193, 224 ; Sanderianus, 265 ; S. Ralli's var., 253

"Phajolimatopreptanthe," 267

Pickering Lodge Sale, 129, 161, 226, 342

Phalænopsis Aphrodite, 98 ; (Fig. 20) 209 ; × F. L. Ames, 106 ; fugax, 231 ; grandiflora, 2, 100 ; × intermedia Vesta, 128 ; × leucorrhoda (Fig. 22), 209, 210 ; × l. Cynthia (Fig. 23), 209, 210 ; Parishii, 165 ; Schilleriana, 2 (Fig. 21), 209 ; S. vestalis, 157 ; tetraspis, 159, 178 ; × Vesta, 128 ; Youngii, 95

Phalænopsis at Albany, 228; at Clapton, 82; at Henham Hall, 98; culture of, 38, 56, 100, 163; group of, 209
Platyclinis filiformis, 255
Pleione maculata alba, 16
Pleiones, culture of, 26, 368
Pleurothallis asterophora, 127; Barberiana, 127; Grobyi, 127; inflata, 169; Krænzlinii, 285; Laucheana, 320; lepanthiformis, 372; maculata, 53; ornata, 158; pergracilis, 53; pernambucensis, 359; picta, 319; Rœzlii, 94; ruscifolia, 47; scapha, 31; unistriata, 53
Pholidota imbricata, 136
Podochilus longicalcaratus, 199
Pogonia divaricata, 46; speciosa, 325
Pollen in quills, 292
Polycycnis Lehmanni, 360
Polypodium fibre, 242, 283
Polystachya Buchanani, 53; bulbophylloides, 222; Lawrenceana, 222; luteola, 134
Ponera prolifera, 47
Ponthieva glandulosa, 76
PORTRAITS—Aërides Lawrenceæ, 91; quinquevulnerum, 311; Savageanum, 343—Aganisia lepida, 60—Angræcum Fournierianum, 246; sesquipedale, 123, 343—Anguloa × Madouxiana, 343 — Arachnanthe Clarkei, 60; moschifera, 343—Brassia Lawrenceana, 178—Broughtonia sanguinea, 343—Calanthe × Baron Schröder, 123 — Catasetum atratum, 60; Gnomus, 90; Imschootianum, 91; macrocarpum Lindeni, 311, 370; Rodigasianum tenebrosum, 152 — Cattleya Aclandiæ maxima, 311; A. salmonea, 59; Cupidon, 370; Eldorado Lindeni 219; E. Owenii, 219; E. Treyeranæ, 91; gigas, 219; g. Countess of Derby, 311; guttata, 370; labiata Foleyana, 343; × Lord Rothschild, 246; Lueddemanniana alba, 123; Mossiæ Treyeranæ, 370; M. Wambekeana, 343; × Parthenia, 60; Rex, 178; Trianæ Capartiana, 311; Trianæ Schrœderæ, 178; × Victoria-Regina, 343; Walkeriana nobilior, 27—Chondrorhyncha Chestertoni, 152—Chysis bractescens, 152; lævis, 91—Cochlioda Nœtzliana, 246—Cœlogyne cristata, 152; cristata Lemoniana, 153; cuprea, 124; Dayana, 219; Mossiæ, 153, 178; speciosa, 311—Cycnoches Loddigesii, 343—Cymbidium eburneum, 311; × Winnianum, 123—Cypripedium × Adonis, 343; × Adrastus, 91, 178; × Annie Measures, 178; × Aphrodite, 90; × Ashworthiæ, 123; callosum Sanderæ, 219; × Calypso Oakwood var., 178; caudatum, 278; × Charles Richman, 311; Charlesworthii, 370; × Chlonius, 311; × Claudii, 59; × Clotilde Moens, 59; × conco-Lawre, 153; × Dallemagnei, 219; × Denisianum, 370; × Fairieano-Lawrenceanum, 27, 59; × fascinatum, 91; × Gibezianum, 311; Godefroyæ leucochilum, 246, 343; × grande atratum, 219; × Gravesiæ, 122; insigne illustre, 59; i. montanum, 219; × James H. Veitch, 311; Klotzschianum, 178; × Lathamianum, 59; × Lawrebel, 153, 343; × Leysenianum, 311; × macrochilum giganteum, 179; Mastersianum, 179; Petri, 246; philippinense, 91; Roebelenii, 124; × Sedeni candidulum, 91; × selligerum majus, 91; Stonei platytænium, 312; superbiens, 123, 312; × Weathersianum, 59; × Winifred Hollington, 153—Dendrobium atroviolaceum, 90, 278; chrysanthum, 179; Cœlogyne, 370; × dellense, 179, 219; Devonianum, 123; × Euryalus, 179; glomeratum, 179; Griffithianum Guiberti, 246; Harveyanum, 370; Johnsoniæ, 343; nobile, 219; n. Hackbridgense, 246; n. Schrœderianum, 219; Phalænopsis Schrœderianum, 122; speciosum Hillii, 219; sphegidoglossum, 124; suavissimum, 246; Wardianum Lindeniæ, 278—Disa × langleyensis, 246; nervosa, 312; × Veitchii, 278—Epidendrum bicornutum, 343; Ellisii, 179—Eria meirax, 24—Eulophia Warburgiana, 124; Zeyheri, 27—Eulophiella Elisabethæ, 179—Grammatophyllum Measuresianum, 278—Habenaria Susannæ, 312—Hexisia bidentata, 59—Houllettia Lansbergii, 246—Lælia anceps, 90; a. Amesiana, 28; a. Ashworthiana, 90, 91; a. Sanderiana, 90; a. Schrœderiana, 60; autumnalis alba, 343; × callistoglossa, 153; × Finckeniana, 28, 59, 153; grandis tenebrosa, 123; × juvenilis, 219; purpurata Comte de Montebello, 343; Lælio-cattleya × broomfieldensis, 312; Canhamiana alba, 246, 312; × Cauwenberghei, 312; × elegans leucotata, 220; × Frederick Boyle, 220, 246; × Hon. Mrs. Astor, 122, 123; × Nysa, 59; × Pittiana, 122; × Timora, 246; × Tydea, 123—Lissochilus giganteus, 179—Listrostachys Metteniæ, 124—Luisia Griffithii, 124—Lycaste costata, 220; × Imschootiana, 27, 28, 59, 123, 220; Luciani,

220; × schœnbrunnensis, 279—Masdevallia Chimæra Mooreana, 179; × Courtauldiana, 124; Davisii, 312; gargantua, 153; × Geleniana, 124; × Measuresiana, 124—Maxillaria longipes, 124; mirabilis, 279; striata, 59; venusta, 220—Miltonia × Bleuana rosea, 371; × Bleui splendens, 279; Phalænopsis, 179; spectabilis, 220; s. Moreliana, 343; s. Moreliana atropurpurea, 344; vexillaria, 220 — Mormodes Cogniauxii, 371—Neuwiedia Lindleyi, 279—Odontoglossum cirrhosum superbum, 312; cordatum aureum, 220, 344; crinitum sapphiratum, 279; crispum apiatum, 153; c. Baroness Schröder, 220; c. Capartianum, 344; c. Dallemagneæ, 297; c. Franz Masereel, 371; c. maculatum, 312; c. mirabile, 312; c. nobilius, 220; c. ocellatum, 344; c. Rex, 220; c. Sanderæ, 220; c. Waltonense, 220; c. Wrigleyanum, 312; c. xanthotes, 247; × elegans Sander's var., 153; Pescatorei Chaberiæ, 344; P. Prince of Orange, 371; × prionopetalum, 60; ramosissimum, 279; Vuylstekeanum, 220—Oncidium ampliatum majus, 220, 279; Kramerianum, 344; Lucasianum, 153; macranthum, 123; ornithorhynchum album, 371; Phalænopsis, 247; sarcodes, 60—Ornithochilus fuscus, 371—Palumbina candida, 220—Phaius × Cooksoni, 60; × Marthæ, 153; × Owenianus, 220; Sanderianus Ralli's var., 297—Phalænopsis × intermedia Portei, 60; Sanderiana, 60; Schilleriana, 123; Stuartiana, 179—Pholidota sesquitorta, 124—Pleurothallis gelida, 124; Kefersteiniana, 124; polyliria, 124; Roezlii, 60—Rodriguezia Lehmanni, 124—Saccolabium cœleste, 91; Wendlandorum, 124—Scuticaria Keyssneriana, 344—Selenipedium Sargentianum, 220—Sobralia sessilis, 312; × Veitchii, 279; xantholeuca, 59—Sophro-cattleya × eximia, 344; læta, 344—Spathoglottis gracilis, 247; Kimballiana, 344; Wrayi, 124—Stanhopea Lowii, 27; Martiana, 220—Stenoglottis fimbriata, 371; longifolia, 371—Trichocentrum tigrinum, 91, 344—Trichopilia hymenantha, 60; Kienastiana, 124; suavis, 312—Vanda Kimballiana, 247; suavis Veitchii, 247; teres, 247; t. Andersoni, 60—Warscewiczella Lindeni, 59; Wailesiana, 179—Zygopetalum Burtii, 60; crinitum, 123; intermedium peruvianum, 279; Klabochorum, 344; rostratum, 59

Potting, 55
Prices of Orchids, 161, 225, 322
Prize for best seedling Orchid, 161, 193
Promenæa microptera, 222
Pterostylis major, 76; obtusa, 76
Pterygodium volucris, 47
Reichenbachianæ, 304
Red spider, 176
Renanthera coccinea, 319
Restrepia antennifera, 237, 286; guttulata 238; maculata, 237
Rodrigues' Brazilian Cattleyas, 206
Rodriguezia secunda, 135
Rodway, J., on Coryanthes, 338
Roebling, C. G.'s, Collection, 323
Rolfe, New Orchids described, 34, 53, 161, 169, 194, 198
Royal Horticultural Society, Orchids at, 29, 61, 92, 125, 155, 185, 222, 253, 284, 317, 349, 372

SACCOLABIUM calceolare, 374; cœleste superbum, 318; longicalcaratum, 199; Mooreanum candidulum, 147; Sanderïanum, 312
Sarcanthus paniculatus, 133; pugioniformis, 350; rostratus, 135; teretifolius, 135; Sarcochilus unguiculatus, 231
Sarcoglottis picta, 76, 77
Satyrium candidum, 302; carneum, 46, 78; coriifolium, 46, 158; ochroleucum, 77; princeps, 158
Sauroglossum elatum, 46
Scaphosepalum gibberosum, 253; microdactylum, 53
Schomburgkia tibicinis, 191, 207
Seedlings, care of, 84, 85; of Cattleya × Hardyana crossed with Lælia Digbyana, 226; of Cypripedium, 117; pricking off, 152; treatment of, 249
Seeds of Orchids, 83; how to sow, 84
Selenipedilum, 269
Selenipedium, 71, 270; × cardinale, abnormal, 354; caudatum, 155; × John Ashworth, 374; Lindleyanum, 93; × macrochilum giganteum, 186; × pulchellum, 31; × Stella, 110
Selenipedium crossed with Cypripedium 19, 66, 171, 258
Selenipediums at Camberwell, 103
Selly Hill Collection, 261
Serapias cordigera, 76; Lingua, 46
Serrastylis modesta, 170
Slugs, 85
Sobralia crossed with Cattleya, 166

Sobralia decora, 274; macrantha Hodgkinsoni, 236; pumila, 54; sessilis, 274; × Veitchii, 226, 239, 285; xantholeuca, Wigan's var., 275
Sobralias, culture of, 216
Sophro-cattleya × eximia, 333, 349; × læta, 351
Sophro-lælia × læta, 333
Sophronitis cernua, 373; grandiflora, 367
Spathoglottis pubescens, 320
Spiranthes cernua, 47, 77; pudica, 135
Stand Hall Collection, 291
Stanhopea Calceolus, 208; grandiflora, 340; Haselowiana, 226; inodora, 287; nigripes, 359; Randii, 359
Stauropsis philippinensis, 308, 350
Stelis micrantha, 76; ophioglossoides, 47
Styles, W. A., on Orchids, 66, 101
Stenorhynchus orchioides, 76, 78; speciosus, 46, 75, 77
Structure of flower, 50, 70

TAUTZ, F. G., death of, 66
Temperatures, abnormal, 363
Temple Show, 129, 187, 205
Thelymitra ixioides, 76
Thrips, 85, 89
Thunia Brymeriana, 169; × Veitchiana superba, 255
Thunias, culture of, 120
Tobacco, 67; powder, 89, 149
Trentham, Orchids at, 246
Trichocentrum albiflorum, 54; tigrinum, 128
Trigonidium latifolium, 271; macranthum, 271
Trizeuxis falcata, 135
Twickenham, Orchids at, 204

VANDA × Charlesworthii, 182, 226, 322; cœrulea, 56, 362; Roeblingiana, 255, 360; Roxburghii, 134; suavis Rosefield var., 186; teres Aurorea, 240
Vanilla aromatica, 45; planifolia, 45, 76
Veitch, H. J., on Orchid Hybridisation, 83; J. and Sons' Orchids, 211; *Manual*, 179
Ventilators, 264

WALTON Grange Collection, 243
Warnham Court Collection, 37
Warscewiczella amazonica, 304; Lindeni, 304
Watt, T. R., Sale of Collection, 193
Weathers, P., Orchid Exchange, 225
Williams, B. S., and Son's Orchids, 278; *Manual*, 232
Woodford's, Mr., Collection, 77

XENIA ORCHIDACEA, 124, 312
Xyleborus perforans, 57
Xylobium squalens, 135

Zygopetalum amazonicum, 304; Lindeni, 304; Lindeniæ, 270; rostratum, 14, 31
Zygopetalum crossed with Odontoglossum, 166

LIST OF ILLUSTRATIONS.

		PAGE
Cypripedium × conco-Lawre		337
,,	Godefroyæ leucochilum	145
,,	× Gravesiæ	81
,,	insigne Sanderæ ...	41
,,	× Io grande	49
,,	× J. Gurney Fowler	361
,,	Mastersianum ...	17
Dendrobium	crassinode	177
,,	× crassinodi-Wardianum	177
,,	× Nestor	273
,,	nobile	113
,,	,, albiflorum ...	113
,,	,, Cooksonianum	113
,,	,, nobilius	113
,,	,, Sanderianum ...	113
,,	× Rolfeæ	113
,,	,, roseum	113
,,	Wardianum ...	177
Lælia anceps Sanderiana		9
,, × Finckeniana		9
Lælia Gouldiana		9
Lycaste Skinneri armeniaca ...		73
Miltonia × Bleuana nobilior		*Frontispiece*
Odontoglossum × Andersonianum Hazelbourne var.		305
,,	Andersonianum superbum ...	305
,,	crispum Capartianum	241
,,	,, Rex... ...	241
,,	,, xanthotes	305
,,	,, Wolstenholmiæ	241
,,	× Horsmanii	305
,,	× Wilckeanum excelsior	241
Phalænopsis	Aphrodite	209
,,	× leucorrhoda	209
,,	,, var. Cynthia	209
,,	Schilleriana	209